# LAND ECONOMICS

*a quarterly journal of*
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# LAND ECONOMICS

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## Middle-Income Housing: The Cooperative Snare?

*By* CHARLES M. HAAR*

**Editor's Note.** When this manuscript was submitted for possible publication in *Land Economics* it was accompanied by a note from the author in which he expressed the hope that it might stand as a polemic which would stimulate further discussion and analysis of this very controversial subject. This led us to look for a companion piece written from the viewpoint of one working in the cooperative housing movement, which might give momentum to such a discussion. Therefore, we asked Roger Willcox, General Manager of the FCH Company, Incorporated, a subsidiary of The Foundation for Cooperative Housing, to give us his observations. This he has done in the pages immediately following this article and under the title: "Cooperative Techniques and Effective Reduction in Housing Costs."

### I

THE perennial problem of supplying decent and adequate housing for the American people is again being re-examined. Especially is the shortage of such housing critical for the middle-income group, ineligible for subsidized public housing yet unable to afford the prices charged by the private housing market. It is obvious that any answer to a social problem subject to such economic, political, and psychological pressures must be an end-product of compromises. Proponents of housing solutions for the middle-income group have become unified behind a program of cooperative housing.[1] This at least seems to underlie the legislative history of the federal housing movement. During the postwar housing reform era, notably the period 1949-52, a veritable deluge of bills[2] swept into both Houses of Congress, all oriented toward some type of cooperative hous-


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[1] The tyranny of labels is not confined solely to the conservative side in this great issue of creating a finer physical environment. Much can be made of the old-guard's retreat from reason by resorting to a blanket condemnation of "Socialism" instead of facing up to the issue of public housing. The question here raised is whether the reformers, in place of applying intelligence to the middle-income housing problem, have not drifted off after an illusory concept—in their case, that of cooperatives.

[2] For example, in the year 1949 at least four bills were introduced into the Senate and forty-eight bills into the House. In the 83d Congress, Representative Javits introduced his version of the "Middle Issue Housing Act of 1953." (H.R. 4271, introduced March 26, 1953). Cf., H.R. 2125, introduced by Representative Barrett, January 26, 1953.

ing program. The advantages of the cooperative approach, which have induced its acceptance as the chosen instrument for providing middle-income homes, are elaborated in housing books,[3] in testimony before Congressional committees,[4] and, perhaps most clearly, in a Senate Sub-Committee report.[5]

This brief note analyzes this proposed solution, and evaluates the chorus of hosannahs it has evoked. The chief question explored is whether any savings flow from the cooperative form of enterprise, in and of itself, which stamp it a valuable tool in meeting the need for middle-income housing. On the basis of those very factors articulated by its advocates, has the case for cooperative housing been made?

## II

The primary advantages stressed by proponents of the cooperative housing program are:

1. *Savings in the Purchase of Site.* A group of families joining together to buy a large tract of land can do so at a lower price per unit than by purchasing on an individual lot basis.

2. *Savings in Site Development.* A lower unit cost in subdividing land and installing utilities and improvements can be obtained by a cooperative group than on an individual basis.

3. *Savings in Professional Fees.* A cooperative association may obtain a lower unit charge for professional services required in planning and development of a project than can an individual.

4. *Savings in Construction Costs.* A cooperative group may secure a lower unit cost of construction than an individual. Thus, a contractor may be satisfied with a smaller profit per unit on a large-scale basis than he would require on a single unit; again, he is able to charge a lower price since he can use labor and materials more efficiently.[6]

5. *Savings in Cost of Financing.* The size of a consolidated mortgage enables the cooperative group to obtain a lower interest rate and other more favorable terms than is possible on an individual mortgage basis.

Do these five factors reduce the cost of a house? Manifestly yes. But this is not the issue. Do they result from the cooperative form of enterprise *per se*? This seems more questionable. Are they not, rather, the outcome of another factor—large-scale enterprise.[7] Savings in site cost enures to any large developer buying land in what may be termed wholesale quantities. Reductions in site development and in construction costs will be equally obtainable by any large-scale utilizer of men, machinery and materials. Savings in professional fees or in financing are, again, a by-product of greater bargaining power. Moreover, the question may legitimately be raised whether the private builder, engaged as he is in the building field and concerned with a series of continuous projects rather than a one-shot affair, may not, because of his greater bargaining power and experience,

[3] *E.g.*, Elsie Danenberg, *Get Your Own Home the Co-Operative Way* (New York: Greenberg, 1949).

[4] See, *e.g.*, Commissioner Foley's speech, January 31, 1949, HHFA Release No. 71 and his statement, Hearings before Committee on Banking & Currency on H.R. 5631 (81st Cong. 1st Sess.) p. 33 (1949).

[5] In large part this outline follows the order of the *Report on Domestic Cooperative Housing* by the staff of a subcommittee of the Senate Committee on Banking and Currency (1950). The "advantages" are spelled out in greater detail in the Hearings before the Subcommittee of the Senate Committee on Banking and Currency on Amendments to S. 2246 (81st Cong. 2nd Sess.) January 12-18, 1950.

[6] The Report of House Committee on Banking and Currency on H.R. 7402 (81st Cong. 2nd Sess. H.R. No. 1686, 1950, p. 20) agrees that, although the sponsor's profit is eliminated, that of the general contractor is not. Also, see Senator Sparkman's statement: "We don't contend that the cost of construction will be changed by it; that is, the initial construction of the project. The cooperative has got to do like any individual would have to do. He has to make a contract to pay the builder. Naturally, we assume that that builder in bidding for that particular job will do it at a price that will enable him to earn a profit."

[7] Cf., statement by Senator Douglas, *op. cit., supra.*, note 5, page 326.

be able to effect greater savings in all the above items than cooperative projects.

## III

Other economies claimed for the cooperative program by its proponents do not reflect this confusion. They are:

6. *Savings Through Self-Help.* These are stated to be two-fold: (a) development, (b) maintenance. Obviously any savings of the "(a)" type are limited to detached housing, not being applicable to the apartment-house or similarly complex structures. The same advantage could be derived through a private form of ownership; indeed, many builders have been leaving unfinished rooms for the occupant to complete by his own efforts.[8] Furthermore, in citing this supposed advantage, the question of the cooperator's own time and efforts is overlooked. Finally, construction, home improvement and landscaping do not appeal to all people—nor do they possess the required skill, thus rendering this type of "savings," whether through private construction or cooperative, of limited appeal.

7. *Savings in Maintenance.* It is asserted that there will also be savings in maintenance attributable to the better care exercised by cooperative members than would be exercised by tenants. This may be true, but is of slight significance. The same motive for preserving property is present in the case of privately-owned houses. In the case of apartment-type property, what is the evidence to indicate that children of owner-members tend less often to scratch four-letter words on the elevators than do those of renters? Moreover, in large cooperative projects the owner-members are more apt to regard themselves as tenants in the face of a centralized management. (And in view of the negligible equity requirement which would be imposed by the middle-income housing bills, this incentive to maintain the premises, if it ever existed, is decreased.)

8. *Savings as a Result of Lower Vacancy Rate.* In his testimony before the Senate Sub-Committee, the Federal Housing Administrator estimated that while a 7% reserve should be added to charges in the case of a private enterprise project as a reserve against vacancy and non-collection of rents, a reserve of only 3% is necessary in the case of a cooperative project. (This is also one of the four advantages listed by Nathan Straus for the cooperative form.[9]) But only if experience through various phases of the business cycle indicates that cooperatives are hit less severely by depressions and vacancies than houses held in different tenure forms, is this setting aside of a smaller reserve supportable.[10] This has hardly been the experience in the past.

[8] Popularly known as "sweat equity."

[9] *Two-Thirds of a Nation* (New York: Alfred A. Knopf, 1952) pp. 113-114. Of course, an even greater "saving" could be achieved by eliminating this reserve altogether. Or the reserve for depreciation. The attempt is made in that book (speaking of mixing apples and oranges) to cite the vacancy losses in public housing which have averaged less than ½%!

Mr. Straus relies on four principal economies by which cooperative housing will reduce rentals $25 a month per dwelling: nonprofit operation ($5); maintenance ($6); vacancy and collection loss ($5); financing ($10-$12). The Report of the House Committee, *op. cit., supra*, note 6, cited three chief savings in addition to the financing savings; elimination of sponsor's profit, although not that of the general contractor; elimination of charges necessary to return a profit on the owner's equity; savings in management and operation. In this connection, examine the "cost savings" listed by H. L. Smith, Chief Technical Adviser, Cooperative Housing Division, F.H.A., in *The Oklahoma Cooperative Housing Story*, 1952, pp. 3-4: "First, the corporation, purchased and improved raw land, instead of paying the higher cost of land already improved. Second, because the legal and technical services required for each unit were largely repetitious, the corporation obtained these services at lower rates. Third, competitive bids were taken. Fourth, building money was advanced from mortgage proceeds at low interest rates. Fifth, sales costs were eliminated. Sixth, income taxes were low, as the corporation operated on a non-profit basis."

[10] See statement by Clarke, on behalf of Mortgage Bankers Association of America, in the Hearings, *op. cit., supra*, note 5, at p. 288, ff. See also, *Nonprofit Housing Projects in the U. S.*, United States Labor Department Bulletin No. 896, 1947. To the extent that rents are lower in comparison with those elsewhere because of more favorable amortization and interest provisions, the vacancy rate will be reduced.

9. *Savings by Eliminating Profit in Operations.* This is supposed to reduce the cooperators' rent since the "profit" accrues to cooperative members rather than to the project builder. What is overlooked is that this reduction in rent is offset at least in part by the members' loss of alternative earnings on the capital that he brings to the project in the form of his equity investment. The amount of these alternative earnings, which may be less than, equal to or more than the "profit," depends, of course, upon the skill and opportunities of the member.

10. *Savings in the Supervision of Affairs.* Several experts testified before the Senate Sub-Committee that the cost of accounting, management and supervisory activities would be reduced by the tenants' doing these jobs themselves.[11] Besides overlooking the monetary value of the members' own time, the use of professional people has much to recommend it as more efficient than the work of the part-time volunteer.

11. *Savings Due to Low Interest and Amortization Rates.* Here is the heart of the matter. This is the largest single item of claimed savings. A detailed breakdown of this saving was furnished by the Housing Administrator in the hearings; his figures were later adopted in the report of the Committee of the House on the Bill.[12] He estimated that the rent for an $8,000, 4½-room house financed under a fifty-year, 100 percent mortgage at 3% (as provided in the Bill under consideration), would be $64.67 per month as opposed to $90.32, had the same building been erected under a thirty-two year, 90 percent mortgage at 4% under Section 608. This saving of over 25% in rental was attributed, in turn, to five lower forms of cost under the cooperative form. That is:

(a) *Lower vacancy rate.* The accounting reserve for vacancies was set at only 3% for the cooperative, as opposed to 7% for the "Section 608" project. This resulted in an estimated saving of $4.00 per month. As stated above, this may or may not be a legitimate item.

(b) *Lower operating costs.* It was further estimated that operating costs would average $24.40 per month for the cooperative as against $30.90 for the 608 project.[13] These figures for the 608 project were conceded to be approximations only, based on but a limited sampling, concentrated primarily on Washington, D. C., and on walk-up units only. And the lower cost of operations attributed to the cooperative project, furthermore, is based on the experience in public housing projects. Since as the Administrator's witness admitted, "'less services are furnished in public housing than in private retail project operated for profit,"[14] demands for services in the cooperative may well result in expenses more comparable to those of private F.H.A. projects than to those of public housing projects. As to the detailed breakdown of this $6.50 savings furnished by the Administrator's office, what (aside from the wish that it be so) reduces the administrative expense of the cooperative to $3.25 as against $4.50, utilities' cost to $8.50 as against $10.95, and insurance charge to $1.00 as against $1.03?[15]

(c) *Lower-return requirement.* After subtracting all expenses from the figure of

[11] Drayton S. Bryant, Housing Consultant, testified that fully one-third could be lopped off management expenses and one-half off the clerical and accounting personnel. Hearings, *op. cit., supra*, note 5, at pp 229, 233.

[12] *Op. cit., supra* note 5, p. 21.

[13] *Id.*, at p. 60.

[14] *Id.*, at p. 59.

[15] The comparative figures are:

| | *608* | *Coop.* |
|---|---|---|
| Administrative Expenses | $ 4.50 | $ 3.25 |
| Utilities | 10.95 | 8.50 |
| Repairs, maintenance, etc. | 9.16 | 6.13 |
| Reserve for replacements | 2.63 | 3.52 |
| Operating expenses | 2.63 | 2.00 |
| Insurance | 1.03 | 1.00 |
| TOTAL | $30.90 | $24.40 |

$64.67, he estimated that $1.83 would be left for reserve and rebates, whereas, subtracting all expenses from the $90.32 rental of the 608 project leaves $7.33 for reserves, income taxes and dividends. This difference of $5.50 is a legitimate difference in cost in favor of cooperatives, but is offset at least in part by the unaccounted-for cost to the member, mentioned above, arising from his loss of alternative earnings on his equity investment.

(d) & (e) *Lower debt charges in amortization and interest.* The figures submitted indicate the saving in debt service by the cooperative device as $10.17 a month, $25.83 compared with $36.00. Here, if anywhere, is the case for stimulating housing via the cooperative method. It is the chief saving. But this—let us be clear—has no relation to the cooperative form of enterprise. A fairer appraisal of the situation[16] would result by comparing the rental due under a 608 project, if the same favorable financial aids were granted it as are proposed for the cooperative. If the term of the mortgage were increased to fifty years and the rate of interest decreased to 3% per annum, the monthly rental for the 608 project would be $79.85, as against the $64.47 provided under the cooperative bill. This figure of $79.85 is further inflated by $3.00 a month, the ½% premium charged under F.H.A. mortgages, an equivalent expense not being charged in the financing of cooperatives.

Thus, accepting the estimates of the proponents of a cooperative housing program that only a 3% reserve in vacancies for cooperative projects is necessary as opposed to a 7% requirement for F.H.A. projects, accepting their estimate of savings in operating expenses of $6.50 a month, and omitting any return at all on the equity, the monthly rent for a unit in the cooperative project is $64.67 as opposed to $76.85 for the 608 project.[17]

[16] Hearings, *op. cit., supras* oten 5, at p. 65.

*Conclusion*

It is not suggested here that the cooperative form of housing is less efficient, or that it may not reduce some of the cost of housing, or that in some instances it does not afford a more adequate solution of an individual's housing problem, or a more productive "way of life." What is advanced is the thesis that the evidence offered for such claims falls short of the burden of persuasion. The first group of savings claimed for cooperatives is attributable to large-scale enterprise. The second is largely a substitution of one type of effort and money for another. And, in any event, the chief saving usually attributed to the cooperative form is due to the financing technique of utilizing long-term mortgages at a low rate of interest and amortization—savings that have no relation whatsoever to the cooperative form of organization.[18]

This mirrors another fundamental problem: if the reason for the high cost of housing is "speculative" profit (as distinguished from the "speculative" profit in the construction process itself), cooperatives, if well organized and supplied with technical advice and information, are part of the answer; if the high cost of housing is due to other factors (say the nature of the building industry), then no

[17] Of this, $7.33 would still be left for reserves, income taxes and dividends.

[18] No attempt is made here to enumerate disadvantages often listed, such as illiquidity of investment, joint liability on a mortgage so that one cooperator may have to make up any defaults of the other cooperators, long delays, and the general reluctance of financial institutions to invest in a new type of enterprise (*e.g.*, testimony of Mr. Foley in Hearings, *op. cit., supra* note 5, p. 70, and Mr. Richards, *Id.*, at p. 434). Because of the personality factor and disputes among divergent groups, this has often proven an insuperable problem. See Charles Abrams, "Another String to the Bow," *Survey*, October 1949, pp. 544-45. In general, see Florence E. Parker, "Cooperative Housing in the United States, Mid-1950," 73, *Monthly Labor Review*, p. 258, and *Housing Cooperatives in the United States, 1949-1950* (joint publication of HHFA and United States Department of Labor, 1951), especially pp. 5-7, and 69-82.

relief is afforded by this form of enterprise, and a remedy must be sought elsewhere.

The chief advantage of the cooperative device—not articulated by its adherents—is that it does furnish a technique through which the savings resulting from a favorable financing or other program of the federal government do pass on to the ultimate consumer. So perceived, it is clear that the cooperative approach is only one answer. Thus, in the formulation of public policy, it becomes necessary to investigate alternative methods of insuring the proper flow of these benefits. But assigning other and automatic savings to the cooperative device as has been the custom in the past not only obscures this meritorious aspect, but confuses the middle-income housing issue. Proposed solutions still run in the old grooves. Claims are made without regard for fact and their validity. Hence, the "fake" cooperatives,[19] exploited by certain builders, which can lead only to the disrepute of the cooperative movement. Conversely the label of "cooperative," anathema to certain Congressmen, may have prevented in this day of the semantic sensitivity, the adoption of solutions for the middle-income housing problem as a whole.

[19] Thus, under Section 213, builders have come in and taken the candy away from the people supposed to be helped by the generous renting provisions of that Section. See, for example, *Bulletin*, of Chicago Metropolitan Home Builders Association, March 23, 1951, blandly and cheerfully announcing to its members that there is a "profit incentive in spite of appearances" in Section 213 of the 1950 Housing Act. Some well known "gimmicks" are then listed for the attention of newcomers: fee construction contracts, sale of land to the cooperative, etc. See also, *Wall Street Journal*, May 10, 1951, p. 1. Lacking in these projects is some public supervision. The suggestion has been made that disclosure requirements on the line of the prospectus information required under the federal securities laws be adapted to this field. See the excellent report by Ira S. Robbins, *Citizens Housing and Planning Council News* (September 1951).

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**Among Articles to Appear in February 1954 Issue:**

Variations in Costs of Mortgage Financing to Veterans in Jacksonville . . . . . CARTER C. OSTERBIND *and* GEORGE B. HURFF

Reliability of Deed Samples as Indicators of Land Market Activity . . . . . ROBERT L. TONTZ, JEPPE KRISTENSEN *and* . . . . . C. CURTIS CABLE, JR.

# Cooperative Techniques and Effective Reduction in Housing Costs

*By* ROGER WILLCOX*

CO-OPERATIVE techniques offer many ways to reduce costs and improve the quality of housing. This article outlines specific possibilities for the most significant type of housing in the United States—the detached single-family home.

The use of cooperatives in the housing field has been widely misunderstood and so we would begin by making certain that our frame of reference is clear. Our primary concern is with the possibilities of "genuine" housing cooperatives. These are non-governmental organizations voluntarily formed by groups of people desiring to provide shelter for themselves on a non-speculative and non-profit basis. They invariably comply with the basic principles of democratic control—one vote for each member; and of limited liability—each member risks only the amount he or she has personally agreed to contribute. The cooperative organization is usually a private corporation through which the members arrange for land acquisition, designing, financing, building, and operation of their housing venture.

The limitation of this discussion to "genuine" cooperatives automatically eliminates many kinds of "so-called" cooperatives from further consideration. By a "so-called" cooperative is meant an organization established to sell off an old building to the tenants or to market luxury apartments in large cities. This type of "cooperative" is not formed by persons desiring to participate in a non-profit and non-speculative enterprise.

Genuine cooperatives providing multi-family buildings have been successful in a few of our larger cities. While this type is not considered directly in the following pages, it generally faces the same problems and can produce the same relative benefits. One difference is that cooperatives of single-family homes are generally an alternative to home ownership, while apartment cooperatives are an alternative to renting.

A distinction should also be made between the currently popular "builder-sponsor" cooperatives and "genuine" cooperatives. Builder-sponsor projects are designed and processed by builders, utilizing the mortgage financing made possible under Section 213 of the National Housing Act as amended in 1950. The cooperative membership consists of people brought into the project by means of advertising and a regular sales campaign. The initiative for building the project remains at all times in the hands of the builders, with the membership taking control only after the project is completed and the original promoters paid off. Such cooperatives, while producing significantly less expensive housing in some areas primarily because of more favorable financing terms, should not be classified as "genuine" cooperatives because they involve speculative and profit-making aspects on the part of the initiators.

The thesis put forth in the present article is based on some recent experiences of the FCH Company with small, "genuine" cooperative housing developments and land subdivisions. This Com-

* General Manager, FCH Company, Incorporated, a subsidiary of the Foundation for Cooperative Housing. The author was formerly assistant to Clarence S. Stein, when he was Planning Coordinator for the New City of Kitimat in British Columbia.

pany is a wholly-owned subsidiary of the non-profit Foundation for Cooperative Housing, whose members include several officers of national cooperative organizaations. It was established to provide technical assistance on a continuing basis to groups wanting to develop housing on a cooperative basis. The parent Foundation was established to . . . . "conduct scientific research into all phases of housing designed to accommodate adequately persons of average or lower than average-income, and particularly all phases of cooperative housing . . . ." The Foundation seeks to build on the experiences of the scattered individual cooperatives, thus preparing the basis for a large and continuing non-profit organization to assist the cooperative housing movement. It recognizes that while some "one-shot" cooperatives succeed, the real future for cooperative housing in this country must await the establishment of a well-financed and competent technical service organization which is able to guide prospective cooperators past the many pitfalls along the road to success.

The advantages and disadvantages of genuine cooperatives are compared in the following paragraphs with the ordinary results of speculatively developed housing. Dollar figures are based on the assumption that we are comparing projects of 50 or more dwellings, a quantity large enough to reflect the basic advantages of large scale production of small homes under conditions now prevalent in the building industry.

### *Advantages of Genuine Cooperatives for Producing Single-Family Houses*

Three categories of advantages in comparison with speculatively built houses are considered: (1) savings in initial development costs, (2) savings in monthly operating expenses, and (3) improved quality without added cost.

(1) *Savings in Initial Development.* Our records indicate that technically well-equipped cooperatives can achieve savings of from ten to twenty percent in the cost of developing small homes. These savings come from two main sources: savings in land development and savings in costs of building and merchandising.

*Land Development* costs of most speculative builders include a generous per lot allowance for fluctuations in market conditions during the period of sales—an allowance which is a repayment for capital risk. But properly developed cooperatives enter into land purchase arrangements only when the group of future members is sufficiently well organized to virtually assure completion of the project. In three non-profit land subdivisions with which we have had experience, the savings in comparison with equivalent properties produced by private builders amounted to between $500 and $2,000 per lot. (One incidental result of these savings has been the need for the organizers of these subdivisions to set up covenants preventing speculative resale to builders!)

*Building and Merchandising* costs of most speculative developers are likewise characterized by fairly high rates of return. A ten percent profit on the total cost of the house is ordinarily a minimum figure for such operations and, considering the great risks in this type of building, the figure is justifiable.

But compare this situation with that facing a well-run cooperative where the members have organized to build their own housing. Here the land has been bought or optioned, plans and specifications have been completed and financing has been lined up *before* the builder is asked to put up a dollar towards construction. The cooperative, as a result of its prior work, is in a position to negotiate or even to advertise for bids on its houses.

The successful "builder" is not a builder in the usual sense at all; but a "contractor" who under ordinary circumstances is willing to build for a much lower rate of return per unit. And why not? All his risks have been reduced, some have been eliminated. He can be assured of payment when the job is done.

As an illustration of the savings possible, we recently secured offers from two multi-million dollar builders to build projects for us at cost plus five percent in one case and cost plus six percent in the other. Both builders agreed to work under a guaranteed maximum price satisfactory to FHA and the cooperators, and to submit their books for audit on completion of the job.

It is even possible for an organized group to realize a substantial saving by entering into a "group purchase"agreement with a builder. The builder would then construct the specified number of houses to approve designs as stated in the contract. In the simplest case the group would agree to buy a certain number of houses of designs already being built by the builder. This "group purchase" is attractive to many builders because they are relieved from the risks of finding purchasers for their output. Their advertising and sales costs thereby eliminated may run to more than three hundred dollars per unit. Their reserves and extra profit margins to offset risks which can be trimmed in the case of a "group purchase" may more than double this amount. There may even be larger savings through economies due to the size of the building operation made possible because of the "group purchase."

(2) *Savings in Monthly Operating Expenses.* Cooperatively-developed housing projects (and builder-sponsor "213s") can have somewhat lower monthly operating expenses per unit than likely for speculatively-built homes of similar initial value. But so far as the single-family house field is concerned, ordinarily the cost savings are not great. There are, however, certain conditions under which important savings can be made—both in financing costs and in operating costs.

*Financing costs* of one kind of cooperative may be substantially lower than for any other kind of housing; something in the order of one dollar per month per $1000 of mortgage carried (which will amount to more than $10. per month in many instances). This type of cooperative is the "management type," financed by a single, blanket mortgage covering all the dwellings in the development. Such a project mortgage is less expensive per dwelling because, from the lender's point of view, it is easier to service and is a better risk. For if one of the cooperative members defaults on his obligations, his fellow members must make up the shortage or endanger their entire jointly-owned property.

The members of management type cooperatives thus pay less for their financing, in return for assuming a greater risk. But with good management practices and gradual accumulation of reserves against the day when, as part of a local or national business recession, it is impossible to rent or resell the home of a defaulting member, the risk should be no greater than that of any individual home owner. In fact a properly functioning management type cooperative offers a sort of insurance to its members against bad times that may affect one or more individuals, through its reserves.

*Operating costs* of single-family homes in cooperatives can be significantly cut, but only by a very high degree of community action. The secret is group purchase arrangements for fuel, maintenance, consumer items used by all members and sometimes for school and transportation facilities. This is an extension of the

cooperative technique which can be really helpful in reducing many kinds of costs to home owners, from insurance to milk deliveries.

A little-publicized fact is worth repeating at this point. The *hidden costs of home ownership* are almost universally underestimated by both seller and buyer alike. A small house in the northern regions of the United States, advertised as having "carrying charges" of $65. per month (including interest, amortization, insurance and estimated taxes), will frequently cost on the average close to $100 per month to own and maintain over a period of years. Home owners, when considering the costs of owning versus renting, do not have a valid basis for calculating the costs of replacing major items, repainting and redecorating, repairing plumbing and other mechanical equipment, caring for grounds around the house and other operating expenses. And not until the bills start coming in do they often realize the monthly load of heat, hot water, electricity, and gas.

(3) *Improved Quality Without Added Cost.* Compared with ordinary speculative developments, cooperatives offer a way to achieve greatly improved living conditions for little or no added expense. Some illustrations of this vital fact are detailed here; there are many others which may be brought to bear, particularly as the size of the project increases.

*Better Subdivision Layouts.* It is a curious and sad fact that even the best of speculative builders violate many cardinal principles of good land planning in their subdivisions. The reason is obvious. Most builders think of land as a vehicle for selling houses. Put another house on a given tract of land and they figure it is just that much more profit; since the real money is in building houses and not in developing land. The result is that most builders ask their engineers and site planners to squeeze the very last lot out of their layout—often at a ridiculous expense.

An experienced and imaginative land planner can easily show that in most subdivisions the *cost per lot* of land, roads and utilities would actually be *reduced* if blocks were made larger, more streets turned into cul-de-sacs (even if they must have 120-feet diameter turnarounds) and certain land areas reserved for community purposes or even "thrown away." This is particularly true in dealing with "interesting land"—land that is hilly, wooded, perhaps rocky or precipitous in spots; land that if the truth be known offers the best possibilities for outstanding home sites.

Cooperatives can and should also place at least ten percent of their reasonably good building land into interior-block parks having little or no direct street frontage. Street frontage costs plenty of money; often the costs of utilities and street paving total two or three times the cost of the raw land itself in single-family house areas. This fact, combined with the usual possibilities of varied terrain and irregular project boundaries often makes it possible to create interior block parks of considerable size *without increasing* the average cost of lots in the development. Interior block parks thus created can be used for playgrounds, sites for nursery and kindergarten and other community buildings, off-street paved walkways to attract and keep children away from dangerous streets, and just pleasant landscaped or "natural" areas in community ownership towards which to face the living rooms of homes.

Cooperatives have another aspect which gives them a further advantage over ordinary real estate developments insofar as land planning is concerned. Community land areas and community buildings can seldom be turned over for

operation by the local municipality. In fact, since members of the cooperative are the chief beneficiaries of such facilities, this may not be desirable even if practical. But some organization must be available to bear the costs of taxes, liability insurance, and maintenance generally on community land and facilities. Where there is a cooperative already in existence it forms the obvious organization to take on this added responsibility.

In passing it should be noted that there are a few outstanding private developments, some even with property-owner associations which have assessing powers and maintain sizeable community land and building facilities. Perhaps the best known one in the East is Radburn, New Jersey, which for a generation has maintained a really comprehensive arrangement of interior community parks and and two swimming pools with funds provided by some 600 individually-owned homes and a few apartments. There are others on Long Island and in Los Angeles and elsewhere; mostly for higher priced homes. But in general these ideas of good land and community planning have not "caught on" even though their practicability has been demonstrated for all kinds of developments and is well known among professionals in the fields of community and land planning.

*Better Lot and House Designs.* This is a second general area in which cooperative endeavor can improve housing quality without increasing cost.

Building and designing in direct response to articulate consumer needs as expressed through a genuine cooperative leads to many interesting variations over ordinary development practice. Perhaps the most important, we find a demand to increase the size of lots and the space inside houses—at the expense of fancy kitchen equipment and other gadgetry. You can always add washing machines and television sets later, but you cannot enlarge the size of rooms or make your lot ten feet wider. We think that three-bedroom houses of 1,000 square feet of floor area, placed on lots of 70 feet x 110 feet, illustrate the practical minimum for genuine cooperatives of lower cost homes in most American communities today, whereas most builders erect smaller houses on lots no more than 55 feet wide if they are permitted to do so.

Design as well as size of houses is influenced by cooperative consumer demands. When architects are forced to create houses designed for quick sale, they tend to be flashy, to have eye-appeal which will make for overpowering sales appeal. But in cooperatively built homes there is a more balanced pressure for larger bathrooms with space suitable for a bathinet, clothes hamper, scales or maybe a chest of drawers. Bedrooms have to be designed so they furnish well in more than one way; bedroom windows should not all be the 'modern' high type which prevent decent air circulation at bed level.

Houses should be oriented so living rooms open out onto the usable outdoor area—ordinarily the part of the lot which by topography or by design is screened from the public gaze of passersby down the street. The front entrance should avoid dining and living room areas; and it is preferable to be able to enter the house and go to the bedrooms without passing through other rooms.

These are but a few of the elementary design points which tend to find more adequate expression in housing built for real, live customers, instead of for quick sale. Such design improvements do not have to be custom-built. They may have no dollar or even resale value; but they have a real and lasting influence on

the quality of living which the occupants enjoy.

*Practical Disadvantages of Cooperatives in the Small House Field*

The advantages of cooperative housing must not be overemphasized. The mortality rate of housing cooperatives in our country has been exceptionally high—and for good reason.

The difficulties faced by housing cooperatives are summarized in perhaps the best available current study: *Housing Cooperatives In the United States, 1949-1950:* a joint publication of the Division of Housing Research, Housing and Home Finance Agency, and the Bureau of Labor Statistics, United States Dept. of Labor (Housing Research Paper No. 24; Labor Bulletin No. 1093, published in 1952 and available from the U. S. Gov't Printing Office for 65 cents). This study lists the most serious problems faced by the 165 associations studied. In order of their importance they are: (a) the matter of obtaining financing and insurance; (b) the long periods of delay while land is sought, housing types investigated, neighborhood hostility overcome, financing arranged, mortgage insurance applications processed, and builder brought under contract; (c) increases in costs of materials; and (d) loss of members because of (a), (b) and (c) above.

These difficulties may be expressed somewhat differently. There are three kinds of problems to be overcome if genuine cooperatives are to succeed: (1) technical complexities of the building business, (2) the need for large amounts of equity and borrowed capital, and (3) the need for organizational ability.

(1) *Technical Complexities of the Building Business.* This is perhaps the primary reason for failure of housing cooperatives. For although financing is listed as number one by the official study cited above, financing may be easy to get if you know how.

When groups of people associate themselves to build houses they ordinarily are faced with literally hundreds of unfamiliar and complex matters. They usually find few sympathetic advisors and they are often handicapped by having in their midst a great diversity of opinion as to the kind of homes they really want, the sort of land they need, the amount of money they can afford to pay. They have read too many magazines about beautiful houses—costing $30,000 up. Adding all these things together, the temptation is strong for them to come up with an unworkable propostion.

At the same time they are faced with a building industry which is far from streamlined. The same house may be produced by one builder for nearly twice what another builder would charge. Certain kinds of house designs lend themselves to economical construction, and their cost can be brought down sharply when more are built. Others require skilled supervision at many points and do not work out well. Real estate brokers, building materials supply houses, the cost of materials and the availability of labor—all these can become real stumbling blocks. And not a few cooperatives have acquired a piece of land only to find they have stepped on too many local toes; with the result that for one reason or another they cannot build at all.

Possibly the biggest pitfall, costwise, is the question of "extras" and of items which are to differ from house to house. Cost savings come through simplification and standardization of detail—"just a few" extras may amount to thousands of dollars per house.

On the other hand, architects, brokers and builders all dislike the "hydra-headed client," whose various members

each have ideas of their own. The ultimate in nightmares for the average builder is a gallery of "sidewalk superintendents" each of whom has some power to affect what he is trying to do.

One answer to these technical difficulties of housing cooperatives is being developed by organizations like the FCH Company. This organization, under nonprofit sponsorship, is equipped to act as advisor and agent for groups of people desiring to build cooperatively. It has several projects under way in the New York and Maryland areas and we know of individuals and organizations in other areas who can render similar services. We would like to see more organizations capable of giving qualified comprehensive technical assistance on a service charge basis.

(2) *Need for Large Amounts of Capital.* Where cooperative housing movements have been strikingly successful, as in northern Europe and Scandinavia, they have generally been coupled with a savings program for prospective cooperators which secures capital for construction (See *Cooperative Housing In Europe*, a Report of the Banking and Currency Sub-Committee investigating and studying European Housing Programs, Senate Document No 148, United States Government Printing Office, 1950, page 37.)

The problem of securing adequate capital to acquire land, make needed surveys, retain architects, obtain financing, etc., is not so apparent when there are only a few scattered cooperatives. Each such cooperative which gets past the talking stage is usually a special case for one reason or another. But it is doubtful if any large-scale program effective all across the country can be achieved before a real source of capital financing has been established. Housing at an efficient and productive scale is really big business. To achieve the economies of large-scale construction, multi-million dollar enterprises are needed.

(3) *Need for Organizational Ability.* By this is meant the problem of creating organizations strong enough to outlast the myriad difficulties to be overcome. For in the last analysis, cooperative efforts to produce better housing for less money must be built on the basis of people—people who realize that each must contribute both money and time, and who must be prepared to settle for something less than their fondest hopes, if they really want to succeed. These people must finally agree on a fairly standarized set of house plans, on a specific site, laid out in a certain way. They must put up important sums of money.

Welding groups of people into organizations that can accomplish these things cannot be done overnight. It requires competent and devoted leadership. An educational as well as an organizational program must be established. Outside assistance by advisors and technicians can be helpful, particularly in providing answers to questions and illustrations of successful practices elsewhere, but a strong cooperative must have organizational strength within its own membership. Otherwise crucial actions are apt to be taken—too little and too late.

Under these circumstances the growth of the genuine cooperative housing movement may not be too rapid, even if all other obstacles are cleared from the path. But the first step to a large-scale movement here, as in Scandinavia, is to demonstrate the savings and possibilities of such housing ventures in a really convincing way. Then there will be more leadership available and the program can gain momentum.

# The Effective Use of Cartographic Aids in Economics Research

*By* JERRY B. CULVER* *and* ARLIN D. FENTEM*

LAND economists and other social scientists who are concerned with the spatial aspects of land frequently encounter problems too large to "see." The most effective way to gain realistic perspective and to comprehend the areal relationships involved is by the use of maps.

Symbolization is used by many sciences to record and present concepts and ideas too unwieldy to be expressed in words. Maps are symbols used to represent any phenomena, tangible or intangible, which have spatial extent. Geographers have long made use of this device to implement their research in a way similar to the employment of equations and various symbols by chemists, physicists, mathematicians, etc. The very fact that land occupies space prescribes the use of maps to comprehend its problems.

Generally speaking, the use of maps has two aspects, each with its own elements and problems for consideration. One is the use of maps for source material for reference purposes; the other entails their use in recording and presenting one's own information. Cartography as it exists today encompasses both aspects of map use and several good textbooks are available for a comprehensive treatment of problems encountered. [VII, XI, XII][1] There is probably no better way to gain an appreciation of maps than by personally encountering the decisions to be made in their construction. Consequently, some discussion of the problems involved in making maps should aid in a subsequent discussion of their reference use and evaluation.

Although all problems of map construction are interrelated, they may be divided into three phases. These are: first, the determination of just what the map should show; second, the selection of the method and devices to be used in the presentation; and third, the execution of the drawing itself. In many cases the researcher will perform all three functions himself, although some cartographic problems may be of such complexity as to require the services of a professional cartographer or draftsman. In any case, the idea to be presented comes from the researcher and is prerequisite to the decisions in steps two and three.

The variety of ideas that can be presented on maps is not limited to showing locations or simple distributions. If one is aware of the utility of photographs for conveying ideas, then he must recognize the additional advantage of maps where the author may select and control the ingredients for purposes of emphasis or simplification. By a judicious selection of what is shown, a map maker can accomplish almost any desired effect or understanding in somewhat the same way that statistical techniques may be employed to emphasize certain characteristics of quantitative data.

Among the primary decisions to be made in the determining of what the map is to show is that of the scale of presentation. Map scale is simply the ratio of dimensions on the map to dimensions of

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[1] Throughout the article roman numerals in brackets refer to specific references in the bibliography at the end of the article.

the surface represented by the map.[2] However, choice of scale is more complicated than a mere decision as to the size of the map since there is often a violent change in the visual significance of some mapped phenomena when there is a change in map scale. Selection of the scale best suited for the most effective presentation of an idea may require some experimentation.

There is another problem which is closely allied to scale, is dependent upon it to a degree and, like it, influences the decisions in every step of the making of a map. This is the problem of generalization. Here is where the personal element in cartography can greatly alter the visual impression given by a map. It is often difficult to fit the degree of generalization to the scale of the map so as to present a valid picture. The degree of generalization will also depend upon the scope and detail of the project for which the map is being made. The critical and honest judgment required in deciding what is important enough to be retained and what can be left out is the responsibility of the author of the map idea. The problems of scale and generalization may not occur to the casual map maker, and many simple maps will not suffer greatly from this lack of consideration; nevertheless, they are inherent in any map and the wise cartographer will respect the difficulties they entail.

Having decided upon what the map is to show, the second phase of map construction involves a series of problems concerned with the choice of the various cartographic devices and methods of representation. Primary among these is the selection of a base map that will fulfill the requirements as to scale and other properties stipulated by the nature of the subject to be presented. For most cartographic problems base maps are available, or may easily be traced from some existing map. However, one should be very cautious about copying maps from commercially printed sources, especially if the map is intended for publication, because most map houses and publishers copyright their maps. Generally speaking, the maps published by government agencies are best for base maps since they are usually accurate and unrestricted for public use. (Specific sources for base maps will be suggested later.)

If a map of the correct size and scale is not at hand, it is a comparatively simple task to reduce a larger map to the proper scale by the means of a pantograph or by photographic reduction. Increasing the scale of a map by reproduction is not recommended since errors in the original compilation may be magnified into significance by such a procedure. Rarely, except perhaps in field work, will it be necessary to compile one's own base map. However, should this be necessary, there are several sources such as surveying manuals and cartography texts which will supply ample instruction.[3]

Since a map is a flat representation of the earth's curved surface, it will neces-

[2] Confusion often results from the seeming contradiction of the fact that the *larger* the scale, the *smaller* is the area shown and *greater* is the possibility for showing detail; while the *smaller* the scale, the *larger* is the area shown and *less* is the possibility for detail. For example: A map on a single atlas page at the large scale of 1:50,000 could only show a small area like the Loop district of Chicago, while at the small scale of 1:50,000,000, the page would include the whole of North America!

Scales of one or more inches to a mile are considered large-scale maps. The common United States Geological Survey topographic sheet is on the scale of 1:62,500, which means that one inch on the map is equal to 62,500 inches (approximately 1 mile) on the earth, and is considered by geographers to be a large-scale map. A common scale of air photos of 1:20,000 (slightly more than three inches per mile) is considered quite large, while scales of 1:5,000 (12.7 inches per mile) are very large. Maps of intermediate scales include those such as 1:500,000 (approximately 8 miles per inch) and 1:000,000 (approximately 16 miles per inch). Scales of 1:5,000,000 (nearly 80 miles per inch) and smaller are considered to be small-scale maps.

[3] Greenhood [VII] and Raisz [XI] include chapters on surveying and compiling base maps in the field and list other references in their bibliographies on these subjects.

sarily contain a certain amount of distortion. This distortion may affect the idea to be presented, especially if the base map is one of small scale of a large area. The character of the distortion can be controlled to a degree by the map projection, which is the systematic scheme of plotting the curved grid of latitude and longitude lines on a flat mapping surface. The type of projection and accuracy of space-location relationships may be a minor consideration in some land economics work, particularly if the map is on a large scale. For instance, a map showing land ownership might well be drawn upon a rectangular grid, even though it be recognized that the actual survey lines are not precisely rectangular. There are other circumstances, however, when projections and standards of accuracy are more relevant, as when the researcher is measuring distances or areas from a map. In such circumstances, the map-maker should be well enough acquainted with the properties of the various map projections to make an intelligent choice.[4]

If the base map is traced or constructed, the map maker has the prerogative of selecting the base data which will serve as a framework for the main idea of the map. These base data may consist of such things as the coastlines of continents, the boundaries of political divisions, rivers, roads, survey lines, or simply the grid of latitude and longitude. Whatever the choice, care must be taken to select recognizable features which will facilitate the plotting and reading of the principal information to be shown by the map. A frequent fault in compiling a base map is the failure to orient the area shown by the map so it can be located in respect to some larger, recognizable area.

Having acquired a base map, the next consideration is the selection of the symbols and devices to be used in the development of the principal map idea. Cartographic symbols vary widely from characters and signs which bear obvious relation to the features they represent to lines and patterns that do not exist in nature and are visible only on the map. The map itself is a symbol and everything on it is necessarily greatly reduced to a form of symbolization. Certain symbols have been so constantly employed that their use has become traditional, and serious departure from convention may interfere with the map's readability. Convention, however, is not the major criterion for the selection of cartographic devices and methods. Recently, there has been a more logical approach to symbolization emphasizing recognized elements of visual response. Cartography functions best in a balance utilizing both the principles of art and the known facts of visual perception. Such considerations should not intimidate the tyro but are intended to give him an appreciation for the devices at his command.

The land economist will find the variety of cartographic devices equal to the variety of the problems he encounters in his research. The practice of note-taking on maps may prove as useful to him as it has been to the geographer. Maps showing nothing more than simple locations or distributions will be of constant advantage. Beyond these, however, the methods of rendering the various forms of statistical information will probably be most useful to him. It is suggested that any statistical information worthy of being presented in tables be examined to see if it might not be shown to better advantage on a map.

To attempt a catalog and appraisal of the symbols that are used for mapping statistical information would entail much more space than is available here; however, the most commonly used devices

[4] Particularly recommended is the approach to the selection of projections in Robinson's text. [XII].

may be mentioned. Symbols expressing quantity have been divided into three types; point symbols, line symbols, and area symbols. (Fig. 1) Point symbols show particular location and designate amounts by variations in size. The familiar dot map is an example of the use of point symbols where each dot is given a uniform value and placed with a view of showing a distribution of varying density. Other point symbols may be made to show amount by varying their length, area, or volume in proportion to the amount they represent. The commonly used graduated circles or "pie-charts" are examples of this type as are bar-graphs, "block-piles," and any pictorial symbols which show amount by variation in size.

Lines can be made to show quantity by varying in width ("flow-charts"), or by showing distribution by connecting

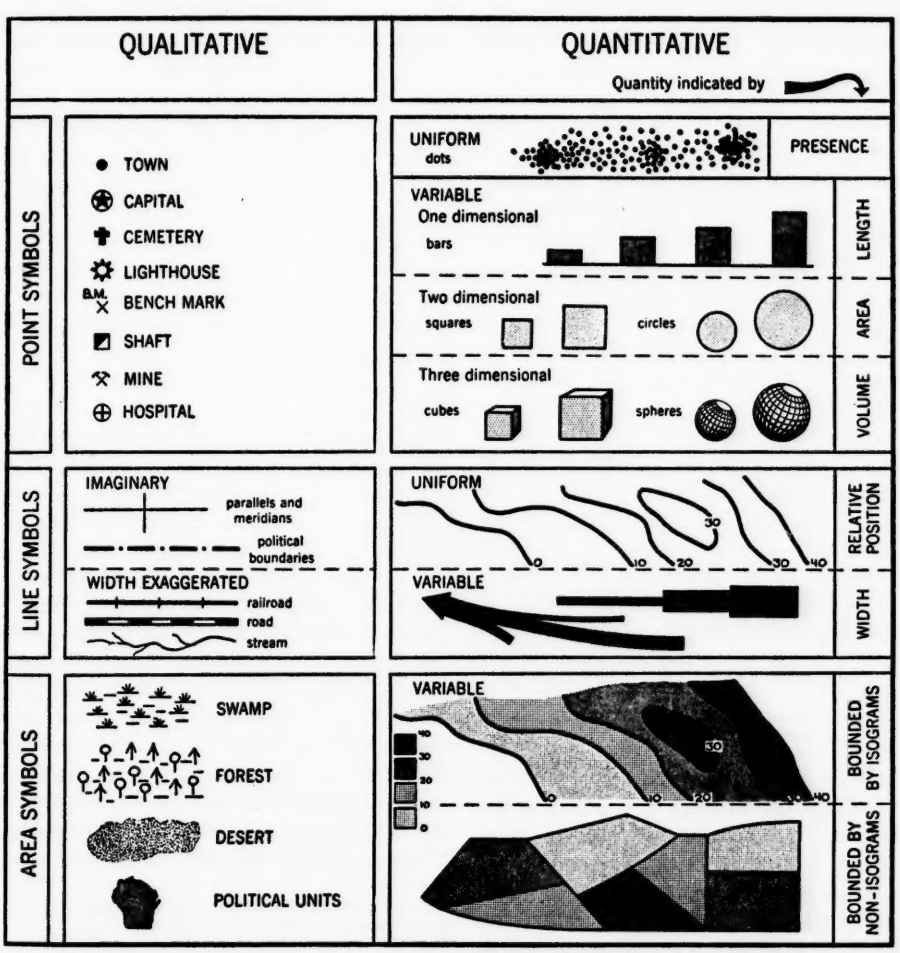


FIGURE 1—Illustrative Outline of Point, Line and Symbols. This Figure Originally Appeared in *The Elements of Cartography*, by Arthur H. Robinson, and is Reproduced by Permission of John H. Wiley & Sons.

points of equal value. Lines of this latter type are called "iso-lines" or "isograms;" contours on a topographic sheet are isograms because they connect points of equal elevation above sea level. Patterns of distribution and density are developed by simply plotting the statistics on a map and connecting equal values with lines. The facility of this device is enhanced by the possibility of showing more than the distribution of absolute values—any relationship that can be expressed by the ratio of one value to another can be mapped with isograms. For example, the yield of corn per acre, or the percent of farm tenancy, are statistical ratios which can be mapped in this fashion.

Symbols of the third type are those which cover area on a map such as patterns or colors. These are frequently used in conjunction with iso-lines or are used to shade in areas within the boundaries of political divisions. They are of great help in emphasizing gradations of density or for differentiating areas of different character. The purpose of the map and the nature of the data will do much to determine the type of symbol to be used; however, the possibilities are limited only by the imagination of the map-maker. The effectiveness of a map depends to a large degree on its simplicity and on the clarity and appropriateness of its sybolization. Again, a good cartography text is recommended for specific instructions in utilizing the various symbols for mapping quantitative information. [XI, XII]

The final phase of making a map is the actual drafting which seems to be a major deterrent in discouraging would-be map-makers from cartographic endeavors. Not that it is to be under-valued for a well executed drawing is desirable, but professional ability is by no means essential for producing useful maps. Those who "cannot draw a straight line" are frequently surprised with what can be accomplished with the simplest of drawing instruments. Lettering, which probably causes as much consternation as any cartographic activity, can be resolved into a mechanical process by the use of lettering guides and devices. Lettering can even be bought from commercial concerns already printed and ready to be pressed on to the map in proper position.[5] The good free-hand letterer of course has an advantage, but the map designer, who must adapt the form and style of lettering to the purpose of the map, can choose from a wide variety of styles.

If the map is to be reproduced for publication, provision should be made so that the drafting technique will comply with the requirements of the reproduction process and the desired format of the final product. As a rule, black and white drawings are the simplest to reproduce, color being somewhat impractical because of the expense involved except when a large number of copies is desired. To substitute for the use of color for areal symbols in black and white drawings, attention should be directed to the commercially available patterns which offer a variety of dot and line designs of varying densities for gradations of shading. The most popular of these is marketed under the name "Zip-a-tone" which has the pattern printed on waxed cellophane. The selected pattern is cut with a stylus to fit the bounding lines and pressed into position similar to the "stick-up" lettering mentioned above.[6] Some of the more simple reproduction processes entail no change of size from the copy to the map, but those involving a photographic step may be drawn at a

[5] A catalog of styles of type, prices, and other pertinent information may be obtained from Monsen-Chicago, Inc., 22 East Illinois Street, Chicago 11, Illinois.

[6] Information and a catalog of patterns may be obtained from the Paratone Company, Chicago, Illinois.

large scale and reduced to the desired size. Rather than having to experience the painful delay of redrawing a map, it is better to check the particular requirements of the chosen reproduction process before drafting the map. Any map can be photographed for slide projection, but care must be taken to adjust the size of lettering and linework so it will be legible from the position of the viewing audience.

The preceding paragraphs have considered the utility of maps and map-making for the presentation of information and ideas. But maps are not only vehicles for communication, they may also be the products of careful research and, in turn, be used as sources for further research. The effective use of maps as source materials has three requirements; the critical analysis of the maps themselves, a knowledge of the kinds of maps and their individual characteristics, and sufficient cartobibliographic information to make them readily available.

Scholars in the social sciences are well aware that documentary research requires critical analysis of the documents consulted. Maps are capable of the same perversions as the written word. While the scholar is an expert on documents, he is less often prepared to evaluate materials presented cartographically.

Attention has already been directed to the distortions which result from misapplication of the laws of visual significance, projections ill-suited to subject matter, and inconsistencies in generalization. A basic knowledge of the fundamental aspects of map characteristics, as outlined in the discussion of cartographic presentation, is prerequisite to their effective use as reference material. It may also be noted that any well-drawn map has an appearance of exactness and authority. This aura of authenticity is independent of the accuracy of the base data employed and results from difficulties in qualification inherent in cartography. With the written word it is possible to introduce qualitative modifiers to indicate varying degrees of precision, but the symbol representing a phenomenon, the exact position of which is unknown, must nevertheless be given a definite location on the map. Techniques have been developed for indicating the reliability of base data, and many survey maps employ them, but their use on statistical maps is relatively rare. For a more complete discussion of the problems encountered in the interpretation of maps, John K. Wright's "Map Makers Are Human" may be consulted. [XXI]

For several decades interest in maps and map-making has been growing steadily. Recent developments in survey methods and map reproduction, and the stimulus of the Second World War, have produced a fund of maps whose quantity and rich variety is unsuspected by all but the specialist. In a large measure the restricted knowledge of maps and map sources possessed by most scholars results from a relative scarcity of cartobibliographic materials The following discussion contains a brief guide to the kinds of maps which seem especially useful to land economists, descriptions of the more important map series, and an introduction to some useful aids to finding maps and atlases.

Maps may be divided into two types; general and special. A map which is best described in terms of the area which it covers is usually a general map. Such maps are designed to be of greatest utility to the largest number of people. For this reason they include a large number of the features of greatest significance to man—communications, rivers, political boundaries, etc. Special, or topical maps are designed for special purposes and are usually concerned with single distribu-

tions. Statistical maps showing distributions of economic phenomena, soils maps, and road maps are examples of this type. Multiple-featured maps for specialized audiences such as city zoning maps are also included in this category.

General maps are published in a wide range of scales. The bulk of the small-scaled maps contained in general or "geographical" atlases are general maps. On the other hand, the topographic maps prepared by many countries on scales as large as 3 inches to 1 mile are also general maps. Reference maps of this type are of course invaluable for any science concerned with spatial relationships.

Readily available small-scale atlas maps and their relatives will often serve for casual reference, but they are of necessity so generalized and lacking in detail that the scholar will often require larger scale maps, even for general reference. For such instances there are a number of map series which cover large portions of the earth at intermediate scales. Especially to be recommended are those commonly referred to as "millionth maps," a group of maps having a common scale (approximately 16 miles to the inch) and conforming to a considerable degree to a common scheme. These qualities endow them with the greatest utility for general reference and comparative purposes. They include the *International Map of the World* which is the result of several decades of cooperative mapping by the governments of various countries, the *Map of Hispanic America* prepared by the American Geographical Society, and a large quantity of maps produced by several countries during the Second World War. Special note may be taken of the Regional Aeronautical Charts reduced from the 1:500,000 "sectional" charts for coverage of the United States. A list of available airway maps may be obtained without cost from the Director, Coast and Geodetic Survey, Washington, D.C.

The Army Map Service has an exceptionally large collection of medium-scaled general maps, and most of the maps of the several series listed above are catalogued in its library. The value of the collection is enhanced by the publication of the combined indexes of the many map series of this nature which it contains [XVII].

As the scale of general maps is increased, they are capable of showing more data in greater detail. At scales of 1:500,000 and larger, they are often referred to as topographic maps. A great many of them are based upon surveys and are likely to be more accurate than compiled maps. The more detailed topographic maps have a utility which transcends that of merely showing the relative locations of gross features; they provide detailed information concerning the nature of the land itself. Representations of terrain, often entirely lacking on small-scale reference maps, become a major element, and on some the vegetation cover is symbolized. Trails and powerlines, drainage ditches and farm houses are some of the features which may be discerned on these detailed maps.

Topographic maps have usually been prepared by government agencies. In the United States topographic sheets on scales ranging from 1:24,000 to 1:125,000 are prepared largely by the United States Geological Survey and may be purchased from that agency for twenty cents each. Index maps showing the extent of coverage are published for each state and are available on request from the United States Geological Survey. At the present time about half the country is mapped. It is difficult to summarize the status of detailed topographic mapping in foreign areas, but it may be said that

Western Europe and Eastern and Southeastern Asia are well mapped. For cartobibliographic data on official maps produced by the principal foreign mapping agencies, *Foreign Maps* by E. Olson and Agnes Whitmarsh [VIII] and Thiele's *Official Map Publications* ([XV] may be consulted. The latter confines its attention to Europe and the Americas but is more detailed than Olson and Whitmarsh. Neither is complete, and both are now somewhat out-of-date. Two generalized world index maps with accompanying texts showing the status of topographic mapping are available: Platt's *Official Topographic Maps* [X], for scales of four inches to the mile and smaller, and the United Nations' *Status of Topographic Mapping* [XVI] for larger scales.

Air photo coverage is available for many areas not adequately mapped. Compared with maps, aerial photographs are less selective, are limited to visible features, and lack quantitative data. On the other hand, they show many more features than are found on maps and are capable of much finer nuances of differentiation. In general, air photos can be said to be easily available, and they are proving to be of great utility in many directions.

The large scale of most air photo coverage and the inclusion of cultural features not commonly shown on topographic maps make them particularly valuable for work in land economics. In a large proportion of cases it is possible to identify land use directly from photographs and often to eliminate much laborious field work. For studies involving relatively recent changes in land use, the record preserved on photography flown at earlier dates is invaluable. The accompanying map (Figure 2) indicates the extent of world coverage and will serve to illustrate what is meant by a "generalized index map." Kirk Stone has prepared a comprehensive treatment of air photo coverage, interpretation and availability in his *Air Photos and American Geographic Research* [XIII]. A summary of basic procedures in air photo interpretation is found in Stone's "Geographical Air Photo Interpretation" [XIV]. For a statement of the extent and availability of aerial photography in North America, "Outstanding Aerial Photographs," prepared by the American Geological Institute is recommended. [I]

Special purpose maps are like general maps in the variety of scales and the amount of detail which they show. The list of phenomena which has been represented on special maps is long and grows constantly with the expanding circle of scholars who have discovered the utility of maps and mapping as research tools. General maps should be classified according to their varying degrees of concentration on the different elements of a common combination of data, but generalization in the description of special maps is more difficult.

As with all maps, scale is an important criterion in selection. The small-scale world maps depicting the distributions of population, economic phenomena, climatic elements, and the like which appear in general and school atlases are useful for general reference. There are topical atlases as well as topical maps; among these, and of particular interest to the land economist, is the *Atlas of American Agriculture* [XVIII], which contains sections of relief, climate, soils, and natural vegetation of the United States. Each section has one or more maps of the United States, and the one on soils contains Marbut's standard *Soil Map of the United States.*

For more precise information concerning phenomena of fundamental impor-

FIGURE 2—Map Showing Portion of the World Covered by Aerial Photographs Which Are Available for Research. Prepared by Kirk H. Stone, Department of Geography, University of Wisconsin.

tance to the land economist, a group of maps of larger scale will be of great utility. These may be classified under the general term "land classification maps" and described as maps showing areas of land differentiated within a system of classes. For the most part, maps in this group represent inherent characteristics of the land itself, capabilities for human use derived from a combination of these characteristics, or current land use. These maps are based upon surveys and on the larger scales are often supplemented by large amounts of reference data.

"Inherent characteristics" are usually confined to elements of terrain; soils, slope, drainage, etc., and to vegetation cover. Maps of this type, together with land utilization maps, are usually preliminary to capability maps, and all three are often produced as a result of coordinated programs by agencies of local, state, or national governments in the United States.

Only two of the many surveys available from federal sources will be mentioned here. Detailed soil surveys have been completed for more than half the nation by the Bureau of Plant Industry, and a map of each county or area surveyed has been published on the scale of an inch to a mile or larger scale. An example of intensive land classification mapping in a large area is that of the Tennessee Valley Region under the auspices of the Tennessee Valley Authority which has prepared a list of the many maps in its files. Among the states which have carried out intensive land classification mapping are Wisconsin and Michigan. For comprehensive, though not inclusive, information concerning official land classification maps, consult *Land Classification in the United States* [XX], which contains a valuable tabular statement and numerous index maps.

The scholar who wishes to make use of cartographic techniques for assembling and presenting the facts of spatial relationships will be concerned with the availability of base maps. A large proportion of reference material available for statistical mapping is comprised of census statistics collected for civil divisions. For studies concerned with the United States, excellent bases are available and may be obtained at low cost from the Superintendent of Documents, Washington, D. C.; they consist of state maps showing minor civil divisions, in most cases of scales on approximately 1:1,000,000, and maps of the whole country (1:5,000,000 and 1:7,500,000) showing county boundaries. A set of maps showing the county boundaries at ten-year intervals beginning with 1840 may be obtained from the same source. On all these maps, each of the civil divisions is identified so that data may be easily transcribed from the national census.

If similar base maps are desired of foreign areas, it is suggested that inquiry be directed to the embassies of the various countries or to the Office of Foreign Agricultural Relations, which has published some outline maps.

On some occasions the land economist will wish to prepare large-scale maps himself or to record data secured from field work or other sources. In these instances he need experience little difficulty in securing adequate base maps. Among those of particular value are the *Township Survey Plats*, which were prepared by the General Land Office and cover most of the country on the scale of two inches to the mile. These may be purchased from the Bureau of Land Management, Department of the Interior, Washington, D. C. *County Highway Maps*, especially useful in motor reconnaissance, are available from the highway commissions of the various states. Land economists will

find particular use for the plat books which have been published for many counties in the United States.[7] They may be obtained by contacting agricultural agents or other county officers. Base maps for urban studies may often be secured from city agencies such as planning commissions and from the plats that sub-dividers are required to file in many cities. Very detailed are the fire insurance maps provided for thousands of cities by the Sanborn Map Company; these are obtainable from either municipal reference libraries or the offices of large insurance companies. Aerial photographs may also be profitably used as base maps.

References by Olson and Whitmarsh [VIII], Thiele [XV], and the National Resources Planning Board [XX], already cited, and Besterman's *A World Bibliography of Bibliographies* [II] may be listed as fairly up-to-date sources which may lead one to other map-finding aids. The most comprehensive treatment of cartobibliographical aids is that of Wright and Platt in their *Aids to Geographical Research* [XXII], which is also a major source of map and atlas references. It should be noted that maps are a major portion of the content of articles and books in geography. The geographical bibliographies: *Geographisches Jahrbuch* [VI], *Bibliographie geographique internationale* [IV], *Current Geographical Publications* [V], and especially, *Petermanns Mitteilungen* [IX] and *Bibliographie catrographique internationale* [III], contain many descriptive references to maps. Two great map collections in the United States are those of the American Geographical Society in New York and the Map Division of the Library of Congress, both of which are organized for research. The Library of Congress has recently published a list of atlases in its collection [XIX].

As a final reference, attention should be directed to the services of the Map Information Office, located in the Geological Survey, North Interior Building, Washington, D. C., which will provide answers to any inquiries concerning maps and air photos available from the various government agencies.

[7] Cadastral maps such as those found in plat books are not geographically correct, i.e., directions are not true, and accurate linear and areal measurements cannot be made on them.

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## Among Articles to Appear in February 1954 Issue:

Cost of Capital Techniques Employed in Determining the Rate of Return for Public Utilities.....LIONEL W. THATCHER

Some Aspects of the Rate-of-Return Problem....ELI W. CLEMENS

# Land Reform and Industrial Development in Meiji Japan†

*By* IRVING I. KRAMER*

A recent article[1] suggests a joint program of agrarian reform and industrial development for underdeveloped areas. The objectives are to reapportion land and finance industry and thereby create social stability and economic viability. The proposed program is of significance because of three factors: (a) declining American foreign aid, (b) the insufficient compensatory flow of private investment capital to underdeveloped areas, and (c) the fact that a similar program showed remarkable results about a century ago in a country faced with conditions comparable to those faced by many countries today.

That article proposes government acquisition of large landholdings and the necessary redistribution, but suggests that the deposed owners be compensated by negotiable bonds which might be utilized as the basis for capitalization of essential industries. A further requirement of this program would be the establishment of a Central Bank at which the landbonds could be pledged as security for loans to finance approved industrial investment projects to be of direct benefit to the national economy. An important advantage of such a coordinated program, the article points out, is that the government, as mortgage holder, will be in a position to exercise some control over efficient use of agricultural land while, through the control of investment funds released to bondholders, the government will be able to direct a beneficial pattern of industrial development.

It is recognized that this scheme is merely a portion of the requisite overall country program. Such a program should include planning for fiscal administration, public health, technical assistance, military end-item aid, and other projects similar to those currently programmed under MSA. It is expected that minimal foreign aid for pilot plants, mineral surveys, port, railroad, and power projects will remain as an essential feature to the stimulation of private enterprise. The Johnson-Metcalf proposal presupposes substantial support from the governments involved through a desire to diffuse land ownership and through energetic encouragement (including necessary subsidies) for the indigenous development of industry. The plan has a reasonable chance of success in those countries of Asia, Africa, the Near East, Latin America, and possibly southern Europe where it might be applicable.

### *The Japanese Precedent*

Not unlike many relatively backward countries today, Japan of Perry's day was faced with the external pressure of potential aggressors while attempting to cope with the internal problems of economic deterioration and social unrest. Inadequate defenses, the inability of the central government to finance its defense effort, and the fear of the central government to allow potentially anti-government forces to arm themselves against the external menace were all problems which faced Japan but with which we are familiar today.

† The author is indebted to V. Webster Johnson of the the Mutual Security Agency for helpful comments and suggestions in the preparation of this article.

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[1] V. Webster Johnson and John E. Metcalf, "Land Redistribution and Industrial Development," *Land Economics*, May 1953.

*External Pressure.* As early as 1739 a Russian ship appears to have put in along the eastern coast of the main island of Japan. A Polish exile, Benyowski, touched on Japan in his escape from Siberia and left an unverified report of Russian designs on Japan. In 1793 a Russian ship under the command of Lt. Laxman dropped anchor at Hokkaido and in 1804 Lesanov visited Nagesaki with a request for trading privileges. "By this time certain far sighted Japanese had already taken alarm, thinking that their country was in danger of Russian aggression."[2] Fear of this external pressure resulted in a government order in 1825 to exclude by force all foreign ships from Japan. In 1837 the American ship, *Morrison*, attempted to land Japanese shipwreck survivors. Between 1844 and 1849 English, French, Dutch, and American ships continued the pressure on the Japanese Government. At the same time that Perry made his first visit to Japan in 1853, Russia sent Vice-Admiral Putiatin to Nagasaki to demand the rights of entrance and trade. Although the external pressure on many Far Eastern countries today is far more ominous, to the Japanese of 100 years ago it bespoke imminent invasion or at least subversion reminiscent of earlier days when the Spanish and Portuguese sought entry.

*Internal Pressure.* The sporadic but increasing pressure from without which threatened to open Japan forcibly was symptomatic of the expanding world trade and the attendant imperialism. The external pressure, however, was but a portion of the picture. Internal unrest stemming from feudal mismanagement, government excesses, and natural calamities had, by the time of Perry's arrival, considerably weakened the government. Financial difficulties appeared at the time of the fourth Shogun[3] and, from the fifth Shogun on, the budget was balanced by debasing the coinage. Various reforms, sumptuary laws, and changes in economic policy wrought no improvement. During the Tempo era (1830-1844) the government stood on the brink of bankruptcy. As Sir George Sansom points out: "One feature of the Tokugawa administration closely related to its breakdown was its deplorable fiscal policy, which depended almost entirely upon oppressive taxation, borrowing, and currency debasement."[4]

Like the serfs in Europe, the Japanese peasants were bound by numerous restrictions. They were not supposed to migrate to towns; they could not permanently alienate their fields, nor divide their holdings among their heirs unless the plot was larger than one cho (2.45 acres) and yielded at least 10 koku (1 koku equals 5.12 bushels) of rice.[5] In order to achieve the maximum of food production the authorities prohibited the growing of luxury crops like tobacco on rice land. To facilitate social control the peasants were organized into goningumi or five-man groups. Through these groups collective responsibility for tax payment and the maintenance of law and order was achieved. Besides giving 40 percent or more of their crops to the lord, the peasant paid countless dues assessed on windows, doors, female children, salt, tobacco, etc. They were also compelled to provide forced labor for public works and to provide horses for courier and postal services.

[2] Sir George Sansom, *The Western World and Japan* (New York: Knopf, 1950), p. 230.

[3] The Shogun was a virtual military dictator who ruled in the name of the Emperor. The Tokugawa clan held these positions from 1603 to the Restoration in 1868. See Chronological Tables and notes on each period in Basil Hall Chamberlain and W. B. Mason, *A Handbook for Travellers in Japan* (London: John Murray, 1903), p. 60.

[4] Sansom, *op. cit.*, p. 230.

[5] Nobutaka Ike, *The Beginnings of Political Democracy in Japan* (Baltimore: Johns Hopkins Press, 1950), p. 9.

In other segments of the economy conditions varied with the yearly rice crop, the status of currency depreciation, taxation rates, the frequency of forced loans, and the overbearing attitudes of social and political superiors. As a matter of security to the Shogun, the daimyo (titled landholders) were required to spend half the year at Edo (Old Tokyo) and half managing their fiefs. During the latter half year the daimyo had to maintain their families in Edo as hostages to the government. They bore the full cost of both town and country residences and all travel expenses plus frequent "gifts" to the Shogun. Their retainers, the samurai, had to accompany them, paying their own costs. This latter group, consisting of the professional warriors, could not enter the trades but had to pay its mounting debts from an ever decreasing rice income. One writer states:

"The impoverishment of their overlords seriously affected the economic well being of the samurai. Under the guise of "loans" the lords often held back a part of the stipends payable to their retainers. Since their needs and wants tended to increase, the reduction in income worked a real hardship on the samurai, so that by the end of the 18th century they were faced with serious economic difficulties. The upshot was that they became heavily indebted to money lenders and rice brokers."[6]

The merchants, traders, and artisans, although often the creditor class, were frequently deprived of their profits. They were subject to forced loans extracted by the government and to acts of amnesty by the Shogun on behalf of the debtor daimyo and samurai. Despite their control of considerable wealth they were deemed socially inferior, a situation often resulting in strained relations. An added distress was the sumptuary legislation which was designed to decrease the extravagances of the lower classes. Often, however, the laws curtailed the few remaining pleasures of these groups and decreased their supplementary incomes.

While the government debased the currency and merchants raised their prices and interest rates the lords sought to extricate themselves from the morass of debt by increasing pressure on the peasantry.

"The already heavily burdened cultivator was made to deliver 60 and sometimes 70 percent of the yield. Such measures, however, had the effect of reducing agricultural production and hence state revenues. Finding life too unrewarding, the peasants could abandon their holdings and flee into towns; or when goaded beyond endurance, rise up in revolt, as indeed they did on many hundreds of occasions."[7]

Common to the peasant movement of the latter years of the Shogunate and particularly the 10 post-Restoration years after 1869, was the stubborn antagonism to rent usury and exorbitant taxation, a situation not unlike that prevailing in many areas today. Although the peasants themselves were little concerned with the overthrow of the existing government they could readily be convinced that the cause of their misfortunes rested with the rice-broker, the usurer, the shopkeepers, the village headman, the harsh official representing the local landlord, or in short, all personifications of feudal oppression. In current history this group has been referred to as the "bourgeoisie" or "middle class." The peasant revolts, although they did not lead directly to the destruction of the old regime, undoubtedly helped to undermine its stability.

[6] Ike, *op. cit.*, p. 10.

[7] Ike, *op. cit.*, p. 13. See also Hugh Borton, "Peasant Uprisings in Japan of the Tokugawa Period," *Transactions of the Asiatic Society of Japan*, Second Series, Vol. 16, 1938. In this exhaustive study of peasant problems Professor Borton lists almost 700 revolts of all sizes during the 264 years of the Tokugawa Shogunate. They constituted a "continual protest against the economic distress in which the peasants found themselves."

*Military Weakness.* The military weakness of Japan during this period was an outgrowth partially of the economic situation and partially of the Shogun's policy of "divide and rule." The requirement of alternate attendance at Edo and at the fief, the heavy cost of Edo life and constant travel, the forced levies for public works, and the constant natural threats to the rice crops made the additional expense of war prohibitive. The government policy of apportioning the fiefs so that potential enemies were bracketed by loyal retainers also played a part in maintaining the uneasy peace. As the Tokugawa period wore on military virtues were remembered with nostalgia but the uniforms more often clothed incompetent favorites of the Shogun or daimyo. What military prowess the samurai still retained was used against the defenseless peasants, to the added distress of that group.

The widespread discontent produced by the economic crises and fed by the inability of the Shogun to cope with the Western powers provided the basis for a political movement. The movement was led by a small band of young, low-ranking samurai who felt deep hatred for the Shogunate. They were drawn mostly from the western clans of Satsuma, Choshu, Tosa, and Hizen which were far removed from the main centers of Tokugawa strength, and which traditionally had been anti-Tokugawa in sentiment.

*The Restoration.* The combination of external pressures from Russian, American and European ships and the internal pressures of economic deterioration, social unrest, military weakness, and political rivalry was more than the Shogunate could resist. When Perry returned in 1854 the Shogun, upon the advice of the daimyo, acquiesced to the American demands and agreed to allow coaling stations, trade, a resident minister, and humane treatment of castaways. At the same time the Shogun was forced by the Western clans to restore all powers to the Emperor. In effect this meant that the Western clans took control of the government since the court, which had been in virtual captivity for 260 years, was little able and less prepared to assume political power.

In 1867, The Emporer Meiji, under the tutelage of the leaders of the Western clans, promulgated the constitution. Ten months later the four clans of Satsuma, Choshu, Tosa, and Hizen which had engineered the Restoration decided that, for permanent strength, the central government should have ultimate title to all national lands. They thereupon surrendered their land registers to the Emperor and convinced or pressured all but 17 of the remaining 275 clans to do likewise. In 1871 an Imperial Edict terminated all clan control of the han (fiefs).

*Industrial Development.* The leaders of the new government were primarily concerned with the creation of trade and industry, not for their own sake, but rather to establish those industries essential to the development of a modern army and navy—prerequisites to a strong state. The creation of these forces depended chiefly on heavy industries, engineering, mining, and shipbuilding—or what we today call "strategic" industries. The government leaders, drawing upon their clan experience, set up model enterprises for private investors to follow.[8] The enterprises were to produce goods then being imported into Japan to meet the de-

[8] A discussion of the methods of initial industrialization may be found in: Herbert Norman, Japan's *Emergence as a Modern State* (New York: Institute of Pacific Relations, 1940), p. 119. Thomas G. Smith, "The Introduction of Western Industry to Japan During the Last Years of the Tokugawa Period," *Harvard Journal of Asiatic Studies*, Vol. II, No. 1, June 1948, pp. 138-140. Count Okuma, "The Industrial Revolution in Japan," *North American Review*, July-December 1900.

mands created by the establishment of the new government and the attendant policy of westernization. Heavy industries for defense and developmental purposes were programmed first. Later the government subsidized light consumer goods industries. This was somewhat the reverse of what usually takes place in an underdeveloped country.

Among the steps taken by the new government to encourage industrial development during this period was the establishment of the Department of Civil Affairs for the "promotion of private industries with the purpose of increasing national wealth." In 1870 the Department of Industrial Affairs was set up to "promote national prosperity by developing [and managing] industrial enterprises."[9]

As early as 1868 a business bureau was established to further the development of domestic and foreign trade. Under the Bureau's control commercial companies were established to engage in such trade. Exchange companies were then organized to render financial assistance to the commercial companies and to facilitate the general circulation of money. Pamphlets on organization and functions of corporations and on the theory and practice of domestic and international trade were published by the government.[10] In addition, mineral surveys were conducted and mining enterprises were enlarged and increased in number. In 1870, with the aid of English technicians and an English loan, a government-sponsored railway was started between Tokyo and Yokohama. In the same year the government set up cement and glass factories, the latter utilizing pre-Meiji experience acquired by the Kagoshima clan. In 1874 foreign style paper was made for the first time. Cotton and woollen mills, a silk filature, clothing factories, printing shops, a fire-brick factory and breweries were also among the government sponsored model enterprises.[11] By 1880 the government owned 3 shipyards, 51 merchant ships, 5 ammunition works, 52 other factories, 10 mines, 75 miles of railroad, and a telegraph system.[12] In addition western machinery was imported by the government and then loaned or sold on the installment plan to private enterpreneurs so that they might be copied for use in Japanese industry.

*Technical Assistance.* The concept of technical assistance was well understood and appreciated in Japan. The admonition of the Emperor that "knowledge should be sought throughout the world" was closely followed and many students were sent abroad to study. Foreign experts were also brought into Japan in sizable numbers.

> "British engineers built the first Japanese railroads. British workmen assisted in the erection and operation of the early iron works and cotton mills, and British teachers conducted a school in glass making in Tokyo. British and American engineers introduced modern mining methods and the use of explosives. French and Italian experts westernized the silk industry, and Swiss were brought in to establish the hemp braiding industry. German experts introduced the brewing industry and later the smelting of zinc and the making of steel and chemicals. French and German specialists were used in the dying plants."[13]

Austrian and American technicians using Swiss machinery, helped develop the paper industry. Even the age-old tea industry underwent westernization for

[9] Yasuzo Horie, "Government Industries in the Early Years of Meiji Era," *Kyoto University Economic Review*, Vol. 14, No. 1, 1939.

[10] Eijiro Honjo, *The Social and Economic History of Japan* (Kyoto: Institute for Research and Economic History of Japan, 1935), p. 320. Cf., Chitoshi Yanaga, *Japan Since Perry* (New York: McGraw-Hill, 1949), p. 142.

[11] Horie, *op. cit.*, pp. 68-69.

[12] G. C. Allen, *A Short Economic History of Modern Japan, 1867-1937* (London (?): George Allen, 1936), p. 30.

[13] John E. and Dorothy J. Orchard, *Japan's Economic Position* (New York: McGraw-Hill, 1930), p. 91. Cf., Allen, *op. cit.* p., 28 and Norman, *op. cit.*, p. 75.

the export market. In 1872 approximately three hundred foreigners were employed in the various departments of the Japanese Government.

*Agrarian Reform.* While these initial steps were being taken toward industrialization the agrarian problem was of utmost concern. The transfer of land registers in 1869 imposed upon the government the dual obligation of compensating the lords for the surrender of their rights and, at the same time, of taking over their former liabilities. The government during this period guaranteed to the daimyo 50 percent of their former incomes. This was altogether a most generous arrangement in view of the vicissitudes of the rice harvest, the problems of peasant recalcitrance, the expense of public works, and the support of the samurai, from which risks and responsibilities the daimyo were now wholly relieved by the government. In addition, the government underwrote their past debts to rice-dealers and merchants and promised to indemnify the Buddhist church for its disestablishment.[14]

The high cost of these obligations and the diminishing revenues resulting from a land tax reform program in 1873 and a tax reduction in 1877 placed the government in severe straights.[15] In 1877 the state decreed that the pensions of the privileged classes should be commuted, and to this end issued interest-bearing bonds totaling close to 191 million yen. In some cases lump sum settlements were made, thereby bringing the grand total of the capitalization up to 211 million yen.[16] The way was now fully open for the development of capitalism.

### *From Pensioners to Investors*

Soon after the Restoration the government had removed the various restrictions impeding the full development of a capitalistic economy. The equality of all classes before the law was decreed; local barriers and restrictions on internal trade were eliminated; the professions and trades were opened to all; freedom of cropping was permitted; and property rights in land were recognized.[17] This liberalization of social, political, and economic life allowed and, in some cases, forced the more enterprising members of the privileged class to enter the business world as capitalistic financiers to whom the government offered direct and indirect aid in various forms.

The policy of pension allotment, subsequent lump sum payment and commutation of pensions caused a profound change in the social and economic structure of Japan. "The feudal lord ceased to be a territorial magnate, drawing his income from the peasants, and became instead, by virtue of the commutation of his pension a financial magnate investing his freshly capitalized wealth into banks, stocks, industries or landed estates, and so joined the small financial oligarchy."[18]

At this time, when the former landholders became bondholders with the interest and desire to invest their capital, the government undertook a new policy, that of relinquishing control of the model private enterprises which it had created. As Professor Horie says:

"It was during this period that the government made desperate efforts to provide the samurai with wider opportunities and to

[14] See Norman, *op. cit.*, pp. 94-95 and Allen, *op. cit.*, p. 35. A significant political feature of the pension system was that the pensions tied the recipient to the government. If the former landowners rebelled against the new regime they would be attacking the source of their income. Hence, despite pension reductions and eventual commutation, widespread opposition did not develop.

[15] Norman, *op. cit.*, pp. 76-77.

[16] Detailed discussion of the pension and bond systems may be found in Norman, *op. cit.*, pp. 95-96; Ike, *op. cit.*, p. 74; Allen *op. cit.*, pp. 37, 39; and Henry Dumolard, *Le Japan, Politique, Economique, et Social* (Paris, 1905), p. 84.

[17] Ike, *op. cit.*, p. 73 and Yanaga, *op. cit.*, Chapter 6.

[18] Norman, *op. cit.*, p. 94 and Horie *op. cit.*, p. 83.

encourage a further participation in industrial activities. It was partly with the same object in mind that in 1878 the Government issued industrial bonds and invested the funds accruing in many new enterprises such as reclamation, railroad construction, the erection of cotton mills, etc. These facts clearly show that the Government's intention in disposing of its industrial enterprises was to transfer them to the samurai."

* * *

"The government industrial enterprises. . . . were generally regarded as important investments, and their transfer to private ownership was prompted largely by the desire to provide investment opportunities to private capitalists, particularly to members of the samurai class."[19]

The first transfers of government-owned enterprises to private interests took place in non-military industries. These included a copper mining company, a paper company, some shipyards, and the Tokyo Gas Company. Two model cotton spinning mills set up by the government in 1881, with up-to-date English machinery, were sold in 1882 and 1886. A government glass factory was handed over to the Ishimura Company in 1885, a spinning mill to Mitsui in 1886, and a silk filature to the same company in 1883. The government-owned cement factory at Fukagawa was leased to the Asano Company in 1883 and sold outright the following year. The Nippon Railway Company founded in 1881 received generous government support in loans and subsidies and the Mitsui company received, gratis, 13 ships used in the the Formosan Expedition of 1874.[20] An important development aiding in the transfer of industries was the formation of insurance companies. The Tokyo Marine Insurance Company, founded in 1879, had a major portion of its capital subscribed to by members of the nobility.[21] Earlier, in 1872, the government had promulgated the National Bank Regulations patterned on the National Bank Act of the United States, and authorizing similar functions. By 1880 publicly-owned shares in the national banks totalled over 41 million yen, of which 32 millions were in shares held by former daimyo, nobles, or samurai.[22]

The change in government industrial policy from direct control to indirect protection was symbolized in the promulgation of the Kojo Harai-Sage Gaisoku (Regulations on the Transfer of Factories) on November 5, 1880 which states: "The factories established for encouraging industries are now well organized and business has become prosperous, so the the government will abandon its ownership [of factories] which ought to be run by the people."[23]

Five years after the promulgation of this law the aggregate capital of private corporations was 50 million yen. By 1890 it had quintupled to 225 million yen, a more than modest indication of the success of the new industrialization program.

As has been indicated, a primary source of capital for the development of new commercial and industrial enterprises were the bonds issued to the privileged classes in commutation of the hereditary pensions. These bonds were used to buy the model enterprises from the government. Official encouragement to the development of banks and brokerage houses gave the bondholders an additional method of creating capital. Bonds were placed with the banks as collateral for loans with which to go into business. The government also placed bonds on the open market prior to 1880 and managed, with the help of Mitsui, to raise 12½ million yen earmarked for the

[19] Horie, *op. cit.*, pp. 82-83.

[20] Norman, *op. cit.*, p. 129.

[21] *The Japan Yearbook 1946-48* (Tokyo: Foreign Affairs Association of Japan, 1949), p. 263.

[22] Norman, *op. cit.*, p. 100.

[23] *Ibid.*, p. 128, quoted in translation from *Meiji Zaisei Shi* (History of Meiji Finance) Vol. XII, p. 231, as originally quoted in Horie, *op. cit.*, p. 262.

encouragement of new enterprise. The organization of stock exchanges between 1877 and 1879 further hastened the development of commercial and industrial enterprises by providing a market for the flotation of private corporation bonds and stocks.

*Conclusion*

For modern industrial needs Japan is lacking in raw materials. For its economy of 100 years ago, however, it did have sufficient, though inferior, sources of coal and iron, sizable deposits of copper, sulphur, gold, and silver, and sufficient timber, pulp, ceramic and cement raw materials, as well as salt and other essentials for a chemical industry.

Among the nations of the Far East today there are many which have comparable supplies of raw materials sufficient to initiate industrial development.[24] Their problem is to create the investment capital necessary to progress from the extraction and primary processing of these raw materials to the final production of basic capital equipment and consumer goods. These nations must also cope with agrarian unrest and the threat of communist pressure both from within and from without. This paper attempts to point out that Japan, at the time of Perry's arrival, was faced with similar problems of internal unrest and external pressure. She sought to strengthen herself and stabilize her economy by developing essential industries and redistributing large landholdings. The landlords were compensated by negotiable bonds. The government, at the same time, set up model industries and a banking system. The bondholders invested their capital by buying out the government enterprises or by securing loans (using the bonds as collateral at the newly established banks) to develop their own enterprises.

It is recognized that political, economic, cultural, geographic, and demographic differences exist between conditions today and those of a hundred years ago in Japan. But, given the necessary flexibility in program planning to cope with these differences, it may be possible to duplicate today, in some measure, the Japanese technical progress of the past.

This view is taken with the full realization that the Japanese peasant never really profited from the Meiji economic revolution, nor was he in fact raised much above the pre-existing feudal position. However, presumably we have come a long way in the past 100 years. The need for social reforms is better understood. More legislation designed to mitigate the past evils of society is now put on the statute books and a steadily increasing portion of it is actually put into operation.

There is the hope that a policy of land redistribution which substantially compensates the former landholder and at the same time encourages him to invest his capital in a more dynamic form of investment—industrialization—may succeed. Its success, however, also depends in large measure upon reasonable credit facilities to stimulate peasant enterprise. The peasant, in the final analysis, is not only the first potential customer, but also a source of raw material and labor. More important, the peasantry are the potential discontented masses to whom the communists appeal.

It is not postulated here that the same degree of subsidization or national ownership of model industries as occurred in Japan is necessary in all countries concerned. However, even where such methods are utilized extensively, it is suggested that cooperation might be to our advantage.

[24] United Nations, *ECAFE Report* (New York: Columbia Press, 1951), Section on Minerals.

In undertaking such a program, we must first realize that it is not a panacea for all the internal and external ills of an underdeveloped nation. This dual policy of land reform and industrial development is only a fragment of the overall program which must also include basic education, training in public administration, public health measures, military aid, economic aid where necessary, and a host of other technical programs all geared to the overriding political imperatives of the current period. Our additional duties might include providing sufficient incentives to industrial development in those areas. A long-range buying program, perhaps lower tariffs, and certainly the continued exchange of technical assistance must be considered. On their part, the peoples of the underdeveloped nations, particularly in South East Asia, must become aware of the ever-present danger of communism.

Our goal is to have integrated programs for the economic, social, military, and political strengthening of the countries in question. These programs must be honestly and diligently supported by the United States and by the participating country. There are three major alternatives to the achievement of such programs. The countries will either eschew our aid or take it gratuitously while they follow their own course. The danger here lies in their possible indifference to the world-wide threat, assuming they could be indifferent with impunity. An equal danger lies in the rise of a strong man, potentially hostile to the United States, in each of these countries. This has taken place recently in parts of the Near East. A second alternative is that the countries may require indefinite United States aid. This is not a pleasing prospect either from our point of view as taxpayers or for the national character of the recipient nation. The final alternative is Soviet domination of these countries. Faced with these choices we must take every opportunity to procure fresh ideas and approaches to our problems and we must fully evaluate the feasibility of new techniques, or of old techniques in new places.

# Flood Insurance

*By* W. B. LANGBEIN*

THE aggregate property damage caused by floods in this country has been estimated variously to average from $200 to $800 million per year. The record also shows the value of property damaged through flooding is increasing. This increase is a part from that attributable to any possible increase in flood frequency. A flood which a few decades ago was merely an inconvenience would today in some localities be a disaster. There has been a great extension of flood-plain use, largely for urban and industrial purposes, despite nature's design of the flood plain for the discharge of flood water. Rivers are economical in the use of their valleys. The river occupies a small channel during its normal regimen and calls upon its flood plain only when the low-water channel is overtaxed. The flood plain therefore remains available for man's use for long periods, subject only to a prior lien by the river.

River flood plains are natural avenues of commerce. Their topography favors the construction and lay-out of towns and factories. Water supplies are near at hand. They are attractive to the farmer and indeed a large part of the national food supply is produced on alluvial soils. These present advantages seem, therefore, to over-balance the seemingly distant threat of damage by flood. Nevertheless, at intervals wide regions are inundated with cataclysmic losses. The present situation in its aspects of public pity and private charity recalls that prevalent before fire insurance became nearly universal.

The stabilization of economic life on valuable flood plains is a national problem. The flood plains represent valuable and productive lands. Transportation lines, farming, industrial plants, all make effective use of the flood plains. There are good and sufficient reasons for use of the flood plains, and abandonment would not make sense. But not all use and occupancy of the flood plains is prudent. Any use of the flood plain should recognize that it was built by the river and therefore embodies certain factors not involved elsewhere. It is not use or occupancy in itself that is unwise, but that so much of it is unadjusted to the facts of flooding.[1] Too few cities have zoning regulations that seek to achieve sensible flood-plain development. Lessons are learned slowly and it may be many generations before wise and safe use of flood-hazard lands generally is achieved. Flood insurance can hasten the process. Mortgage holders would soon learn to require it; and its cost for buildings in danger spots would be an effective deterrent to unwise construction. On the other hand, the cost might well be borne where the enterprise yields or holds promise of great return. But in either case the economic facts would be known.

Flood protection is increasing rapidly since the enactment of the Flood Control Act of 1936 adopted flood control as a national policy. Flood protection through reservoir storage and levee confinement affords a substantial and, in many places, a calculable measure of protection.[2] However, flood control is generally partial and absolute protection is seldom an accomplished certainty. The

* Hydraulic Engineer, United States Geological Survey.

[1] H. C. Klein, "Flood-plain Zoning and Evacuation," *National Fire Protection Association, Quarterly*, April 1939, pp. 3-17.

[2] Edgar E. Foster, "Evaluation of Flood Losses and Benefits", Trans. Am. Soc. Civil Engrs., v. 107, pp. 871-924, 1942.

Army Engineers rarely provide protection above their so-called "standard project flood." Levees can be and are overtopped; reservoirs do fill and spill flood waters. There are many more places where flood control is not practicable, feasible, or desirable than the public is led to realize. A report of an American Society of Civil Engineers Committee on Floods[3] said in part: "A false sense of security appears to be engendered in the public by the many flood-protection works completed, as well as projects not yet completed." Flood control does not eliminate the need for flood insurance, nor does insurance reduce or eliminate the need for flood protection. Indeed the gap between ideal and actual protection is the field of insurance.

Flood insurance would serve to encourage the diminution of risk through self-interest of the assured and of the insurance fund. The fire and casualty companies have contributed enormously to the public welfare through fostering safety education and inspection. Possibly the most satisfactory method of reducing flood damage would be through effective and timely flood warnings. Sound flood-insurance coverage would be contingent upon and would demand prompt and dependable flood-forecasting and accompanying emergency plans.[4]

Although most students of the problem agree that insurance would be desirable, it has been found impracticable to insure losses by floods. Mannes[5] outlines many of these difficulties that have bankrupted all attempts to write flood insurance. This experience shows that wide distribution of risks and long-term contracts are essential ingredients of successful flood insurance. Related problems would be to keep interest alive and to avoid prohibitive premiums. Any policy that would lead to selection of adverse risks must also be avoided.

*Flood damages.* The following is a list of the total damages due to floods in the United States during recent years as reported by the Weather Bureau, together with a list of annual losses from fires as reported by the National Board of Fire Underwriters.

| | Approximate damages by flood (*millions of dollars*) | Approximate damages by fire (*millions of dollars*) |
|---|---|---|
| 1927 | 348 | 473 |
| 1928 | 44 | 465 |
| 1929 | 63 | 459 |
| 1930 | 16 | 502 |
| 1931 | 3 | 452 |
| 1932 | 10 | 401 |
| 1933 | 36 | 271 |
| 1934 | 10 | 271 |
| 1935 | 127 | 235 |
| 1936 | 232 | 266 |
| 1937 | 441 | 255 |
| 1938 | 101 | 258 |
| 1939 | 14 | 275 |
| 1940 | 40 | 286 |
| 1941 | 40 | 304 |
| 1942 | 98 | 314 |
| 1943 | 200 | 373 |
| 1944 | 101 | 437 |
| 1945 | 166 | 484 |
| 1946 | 71 | 554 |
| 1947 | 272 | 648 |
| 1948 | 230 | 715 |
| 1949 | 94 | 668 |
| 1950 | 176 | 688 |
| 1951 | 1,029 | 731 |
| AVERAGE 1927-51 | 160 | 431 |

Figure 1 shows annual damages adjusted to a 1950-52 basis. The adjustment includes variation in the prices and the increase in amount of property on flood plains and exposed to risk. The general average for damages thus adjusted is $225,000,000. The adequacy of the Weather Bureau figures, however, are challenged by the Army Engineers and the Department of Agriculture; each for different reasons. These agencies indi-

[3] Rept. of Joint Committee on Floods, Am. Soc. Civil Engineers: Civil Engineering, p. 155, March 1943.

[4] G. F. White, "Economic Aspects of Flood Forecasting," Amer. Geophys. Union Trans., pt. 2, pp. 218-233, 1939.

[5] Alfred Mannes, *Insurance; Facts and Problems* (New York: Harpers, 1938).

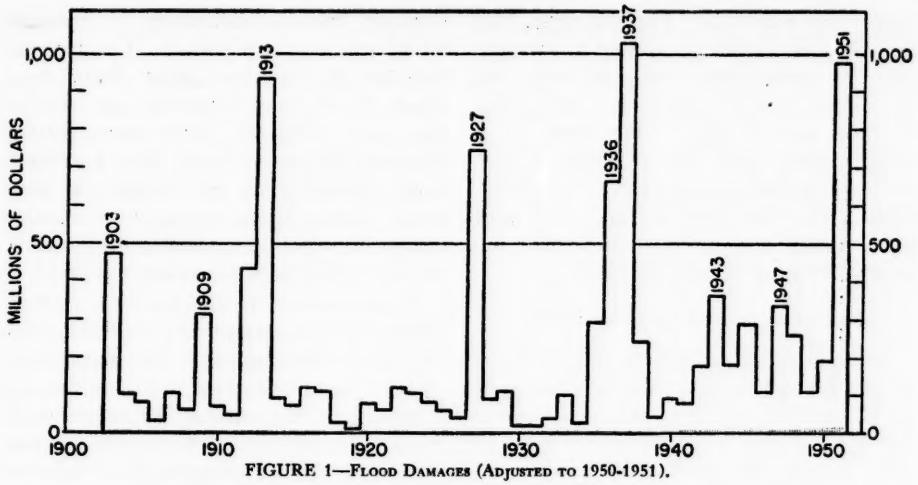


FIGURE 1—Flood Damages (Adjusted to 1950-1951).

cate that the loss is much higher. The Army estimates of the damage include more of the indirect and intangibles, whereas the estimates of the Department of Agriculture give greater weight to damage caused by floods in the small upstream tributaries. In view of the divergent viewpoints and of the importance of figures of flood damages in the justification for proposed measures for flood protection, there seems ample reason for treating these basic economic facts in the same way as fundamental hydrologic data that are the responsibility of separate fact-finding natural-resource organizations such as the Geological Survey and the Weather Bureau. It would not seem inappropriate, therefore, to charge a public agency experienced in economic surveys with this duty.

Great year-to-year variation is shown in the amount of flood losses as compared with fire losses. Variations in annual fire losses largely reflect business activity and replacement costs. Flood losses contain these economic factors, but even greater natural elements as well. Figure 1 shows that flood losses are concentrated in the years when outstanding floods occurred; viz.: 1913 (the Ohio River and tributaries in Ohio during February), 1927 (the Mississippi flood in April and the New England flood in November), 1936 (floods of March in the Northeastern States), and 1937 (Ohio River and Mississippi River floods in January-February). In these years total losses by flood approach or even exceed those by fire. The erratic distribution of flood damage presents a special problem in assuring this kind of risk, and emphasizes particularly the importance of (1) country-wide dispersion of risk to balance losses and (2) long-term contracts to maintain coverage for building reserves during the long periods when there is no flood news on the front page of the daily paper. These figures also show that some central reserve must be provided against the chance occurrence of catastrophic losses in the early years of operation.

The importance of country-wide dispersion may be made apparent immediately by comparing the national figures of losses with those for single regions or drainage basins. Even though, as shown above, the national losses vary greatly from year to year, those for a single basin

vary even more so. For example, the reserves that would be needed to average out the year-to-year national losses for the above 25-year period is 7 times the average rate of loss. However, in a single region, even one as large as the Pacific Northwest, this ratio is 12, in the Ohio Valley the ratio becomes 14.5, and for a single stream the ratio may be nearly 20 for a 25-year period.

*Magnitude and Frequency of Floods*

The primary actuarial problem in evaluating a risk is the determination of its magnitude and frequency. In assessing a flood risk, a continuous record of river stages and discharges provides an essential basis for making an appraisal of flood frequency. The longer the record of experience, the better the data and the higher the grade of the insurance.

River records in the United States extend back with diminishing completeness to about 1880. A few records antedate even this, but reasonable coverage did not begin until about 1910. The principal agencies for the collection of river records include the United States Geological Survey, the United States Weather Bureau, and the United States Corps of Engineers. The Geological Survey now operates a program of river observations at about 6,500 points; records of daily flow are published annually in its Water-Supply Papers, but many more details are contained in its files. The Weather Bureau reports its observations in an annual series entitled, *Daily River Stages on the Principal Rivers of the United States.*

The flood record in the United States rapidly is attaining a degree of completeness that will permit workable estimation of flood risks by accredited statistical methods. The weight of evidence, though not conclusive in all details, is that floods occur fortuitously or at least with a sufficient degree of fortuity to warrant taking advantage of theories based on that condition.[6] The records indicate that in the United States as a whole floods may occur at any time of the year although there are distinct seasonal characteristics in most localities. Large floods occur less frequently than small ones; floods occur at irregular intervals with only secondary relationship to preceding and following events.

When studied in relationship to their magnitudes, floods reveal a marked skew-frequency distribution.[7] The form, however, of this distribution as yet is unknown from a priori deductions. Pearson's well-known curves have been used,[8] and recently Gumbel[9] suggested a form of distribution for annual floods based on the consideration that the annual floods are the maxima in samples of 365 independent daily events. Ordinarily, the satisfactory definition of a skew population by Pearson's curves requires evaluation of at least three characteristics—the mean, the standard deviations, and the skewness. However, the relatively short records generally available make a competent evaluation of the skewness uncertain; higher moments are entirely out of the question. The theory of maximum values, adapted by Gumbel to floods, suggests a coefficient of skew of 1.139 that conforms to a large range of evidence and thereby serves to restrict that otherwise uncertain value.

The literature on flood-frequency analysis is large, and there are many methods available for determining most probable values from the available records of flood peaks. The kind of data to be studied and the method to be used

[6] Allen Hazen, *Flood Flows* (New York: John Wiley, 1930.

[7] C. S. Jarvis and others, *Floods in the United States Magnitude and Frequency* (U. S. Geol. Survey Water-Supply Paper 771, 1936).

[8] W. P. Elderton, *Frequency Curves and Correlation* (London C. & E. Layton, 1906).

[9] E. J. Gumbel, "The Return Period of Flood Flows," *Annals of Mathematical Statistics*, v. 12, 1941.

depends on the nature of the problem. Certain kinds of risks are seasonal, thus one logically might list only floods that occur during the season of risk. In any case, computation of annual damages requires not only considerable actuarial acuity but knowledge of river hydraulics and wide familiarity with sources of river data. Obviously it would be prohibitive to analyze each property separately to determine flood risks. Such procedure might be justifiable where a costly industrial plant is to be insured, but some short cut needs to be worked out where large numbers of small units are involved. In great centers of flood hazards, it should be possible to establish flood zones on existing city plats, defining risk areas in which all buildings are subject to floods of approximately the same frequency. By this means, premium rates could be established for the first level of buildings in a given zone for the second level, etc. The rate for a one-story house would be different than for a two-story building, and so on. The Army Engineers, in the Passaic River valley in New Jersey, were able to assess damages to 10,000 properties for a cost of $50,000, or about $5 apiece. That is comparable, it is believed, to the cost of paper work normally involved in writing insurance.

Or again, it might be possible to issue policies as in rain insurance. Under this practice, the assured buys a policy that pays a specified amount when rainfall at a designated rain gage exceeds a specified depth. Applied to floods, this form of insurance would provide a schedule of specified payments when the stage at a designated river gage reached specified levels. This method makes it necessary for the assured to judge his own risk and thereby minimizes the problems of premium determination and the adjustment of claims. But to avoid abuse, it seems essential to provide that the payments in the event of loss do not exceed some fraction of the actual damage, whatever the face value of the policy bought.

Some limits may be desirable in writing insurance for a given propery. An upper limit would be essential to the extent that it would delimit reserves needed. A minimum limit would be desirable to the extent that it would save the company from many small claims and thus reduce operating costs. It would also seem desirable to limit indemnity to a flood from a specified river to exclude claims from incidental local sources not included in the evaluation. Some feature of co-insurance would be essential. The insurance policy should not underwrite the whole of the loss in order to maintain some stimulus, however small, on the part of the assured to mitigate losses.

*Reliability of Flood-Frequency Estimates.* The effect of errors in the flood-frequency curve on the computed flood risk depends on the form of the flood-damage curve. In cases where most of the damage occurs as a result of the frequent smaller floods, the rare floods may have little weight on the estimate of risk. On the other hand, where damage occurs only during extreme, widespread floods, then the estimate of the flood risk depends greatly on the reliability of the estimate of the frequency of such rare floods.

In general, the sampling error of an estimate varies inversely as the square root of the number of data on which it is based, and it is important to recognize that flood data are few compared with the number of statistics commonly available in other actuarial fields. Consequently, successful flood insurance will require that considerable emphasis be placed upon complete and thorough search through published and unpublished sources of data. No single fact can be

overlooked. In considering a 25-year flood record, the estimate of the 25-year flood is based on only one figure, i.e., the highest. The estimate of the 5-year flood would be based on five data, and so on. In general, the error of estimate varies as the square root of T /N where T is the recurrence interval and N is the number of years of record. Consider again the greatest flood in a 25-year record; it represents a single sample of a 25-year flood. The sampling error is large. There is a 50-percent chance that the highest flood in a 25-year record lies within limits of a 12-year and a 50-year flood. There is also a 50-percent chance that it is greater or less than these limits.

A list or record of flood discharges represents only one sample of the whole history of a river. Different periods display differing characteristics. Flood damages as assessed on a particular flood record will therefore be biased, depending on whether the period is characterized by great, normal, or little flood activity. This conclusion in no way diminishes the value of a given record but is a fact that must be accorded proper recognition in the evaluation of damages. One method is to construct confidence bands that will give conservative or safe determinations of the flood damage. The main actuarial problem here is to determine what confidence limits will be used. In this case one again has access to statistical principles. If the confidence limits are increased unduly, the estimates of damage may be raised to such an extent that the cost of insurance becomes prohibitive. On the other hand, if the confidence band is narrowed, the consequences of bias in a flood sample may be reflected in loss to the insurer. The actuarial problem is to obtain an economic balance between the two.

*Private Versus Government Insurance*

Obviously, flood insurance has not been attractive to those in the insurance business. Of the problems to be solved, probably that of the heavy reserves required is the most formidable. If this obstacle can be met then other problems, though critical, can be solved.

After the 1951 floods on Kansas and lower Missouri Rivers, President Truman asked Congress to consider setting up a national insurance fund, "based, if possible, upon private insurance with reinsurance by the Government. This was the principle of the war-risk insurance in effect during World War II."[10] The testimony of those in the private insurance business was quite hostile to the proposal. The reaction in Congress was to defer action. Later a group of leading insurance businessmen undertook to inform themselves more clearly on the matter and employed a firm of civil engineers to study the physical aspects of the problem. The engineer's report described the methods of computing the frequency of floods and of determining damages and premium rates but did not express any conclusion as to the merits or feasibility of the scheme, leaving the general impression, nevertheless, that the technical problems could be solved. But the group of insurance executives found the scheme unpracticable, stating:[11]

"To the experienced insurance mind, the flood peril presents the same sort of unpredictable widespread devastation and destruction that we associate with modern war damage, and the same considerations which prompted the business of insurance to refrain from assuming liability for war damage to property on land during World War II. . . . . Because of the virtual certainty of the loss, its catastrophic nature, and the impossibility of

[10] "Rehabilitation of Flood-Stricken Areas" Hearings Before a Subcommittee on Appropriations of the House of Representatives, 82nd Cong., 1st Sess., 1951.

[11] *Report on Floods and Flood Damage* (Insurance Executive Association, New York, N. Y.).

making this line of insurance self-supporting due to refusal of the public to purchase such insurance at the rates which would have to be charged to pay annual losses, companies generally could not prudently engage in this field of underwriting. It is our considered opinion that insurance against the peril of flood applicable to fixed property cannot successfully be written and that any specific promise of indemnity for loss by flood must therefore be regarded as in the nature of a subsidy or relief payment, which are quite outside the scope of private business and insurance.

"Since for the reasons outlined private underwriters cannot undertake to provide specific flood indemnity as an insurance venture, it follows that Government likewise could not undertake to provide specific flood indemnity by means of insurance. There is no reason to believe that the Government would encounter fewer obstacles to such an undertaking than private insurers. . . . ."

The reaction of the insurance executives indicates, it seems, a justifiable attitude on their part, but extending their reasoning to government seems questionable. The insurance industry like any other business would not readily enter an undertaking in which the books could not be balanced over a reasonable period of years to obtain a statement of profit and loss. In conventional business the averaging-out process is almost continuous and most certainly is completed within a period no longer than 5 years. Even an occasional peace-time catastrophe places only a temporary drain on reserves which can be recouped in a relatively short period. The ratio of necessary reserves to the volume of business is relatively low.

Flood insurance seems vastly different. It cannot pay off in the working life of an individual and hence could not be attractive to the managers or stockholders of a business enterprise. But government as a permanent, enduring function, with much already at stake, can take a long-range course.

Crop insurance is a pertinent example of the ability of the government to provide insurance against risks which the insurance industry has been unable to cover or considered imprudent to assure. The analogy to flood insurance is very apt. R. M. Bissell, president of the Hartford Fire Company stated in April 1937: "The serious problem confronting the underwriters of crop values is the calamity of simultaneous hazards which may reach such immense proportions that vast resources and tremendous reserves would be necessary to cover losses."[12]

Recognizing the stabilizing effect of agricultural insurance in our entire economy and its attractiveness to farmers, several private underwriters began selling all-risk crop insurance in 1899. Through the next 40 years, several companies attempted to operate all-risk crop-insurance programs. Every attempt failed but did not end the need or demand for all-risk crop insurance.

The federal crop-insurance undertaking has gone through three stages of development until a sound basis for writing all-risk (including floods) crop insurance seems attainable. The first began with the insurance of wheat in 1939. Cotton was added to the program in 1942. The first 5 years of operations resulted in losses each year as a result of bad weather and adverse selectivity—many of the same troubles that beset the earlier private ventures. Because of the heavy losses Congress ordered liquidation of the program in 1944.

Widespread demand for the insurance, by then greatly stimulated, was felt during the ensuing presidential and congressional campaigns of that year; and Congress reinstated the program late in the closing sessions of 1944. National

[12] J. L. Buckler, *All-Risk Crop Insurance* (Federal Crop Insurance Corporation, United States Department of Agriculture, 66 pp.), Dec. 1950 (processed).

operations at the end of crop-year 1947 showed such a substantial deficit that Congress placed the insurance program on a limited experimental basis (Public. No. 320, 80th Congress, 1st sess.). By limiting operations only to those necessary to gain experience and make necessary studies under controlling conditions, it has been possible to develop the means for putting the all-risk crop-insurance program on a sound basis. The first 4 years of the experiment have yielded a net surplus to the insurance funds. The record, though too short to give assurance of success, shows good prospects that a sound and workable national program can be developed gradually.

*Summary*

Floods are almost the sole natural hazard not now insurable by the industrialist or homeowner. To achieve it, despite the abortive experience of bankrupt companies and the unfavorable advice of prominent insurance executives, seems very unlikely. Yet, in the writer's opinion the problem has not been subjected to adequate tests on sound hydrologic and actuarial principles. Experience in crop insurance seems to indicate that a small-scale experiment would be essential before any scheme is put into operation. The main points that an experiment can answer are whether there is a market at the rates that must be charged, whether methods of determining risks can be simplified, what amounts of reserves are needed, and most important, whether "politics" can be kept out. If there is a reasonable chance of success, there should be no reason why the experiment should not be tried. With much already at stake, the government stands to gain much from successful no-loss insurance. It would spare the tremendous public and private hand-outs that follow every flood, and it would avoid the considerable loss in tax revenues to the government. Flood insurance would provide the means whereby those on the flood plains would share the major burden of their damages and thereby provide a check on heedless occupance of flood-hazard land. In a highly developed industrial country such as the United States, flood insurance seems conspicuously needed to give economic stability to threatened areas, and to provide a handle by which to grasp the problem of flood-plain occupancy.

# Some Problems of British New Towns

*By* LLOYD RODWIN*

STARTING as the boldest vision of contemporary British town planning, the New Towns program is now a wavering policy in the hands of sceptical administrators. What are some of the reasons for this reversal?

### *New Towns and Decentralization*

Experience is still quite meagre with New Towns built under the 1946 Act. Complete towns do not yet exist. Fourteen are under construction. Others were in the planning stage when the decision not to build more was made. Since the decision may yet be changed, conclusions on how the program will ultimately fare must still be tentative.

Of the fourteen New Towns already under construction, at least nine are intended to relieve congestion in metropolitan areas. Eight are in the London region: Harlow in the northwest corner of Essex; Basildon in East Essex;[1] Stevenage, Hatfield and Welwyn Garden City, north of London in Hertfordshire; Hemel Hempstead, northwest of London; Bracknell in Berkshire; and Crawley in Sussex, south of London. There is also one such town in Scotland: East Kilbride, six miles southeast of Glasgow. Letchworth, the original Garden City founded by Ebenezer Howard about 37 miles northwest of London, also serves the London area though, unlike Welwyn, it has not been taken over by the government and run by a development corporation. It is still in the hands of its original limited dividend company.

In addition, there are five "independent" towns with different functions: Corby in Northamptonshire, the only town in the Midlands, is intended primarily to help solve the housing problem resulting from the expansion of the steel works; Cwmbran in South Wales, will provide housing and community facilities for the developing industries in the valley between Newport and Pontypool; Newton Aycliffe in Durham will complement the Trading Estate in the area.[2] Nearby Peterlee will attempt to provide an urban concentration for the surrounding mining villages. And Glenrothes in Fifeshire is being built for the miners now shifting to the Lanarkshire pits.

Satellite towns outnumber the independent towns. The principal objective originally was to decentralize London and other metropolitan areas. But despite this emphasis, the decongestion policy seems destined to fail unless its scope is tremendously expanded. Such expansion is unlikely. No New Towns are planned at present. No one in a responsible position takes seriously the notion of decentralization for defence. The present pace of New Town construction averages about one-third to one-quarter of the building in the "Big Wen's" suburbs.[3] Only one town serves Glasgow; and one cynical official observed that it could have been built anywhere since it is scarcely serving Glasgow's needs, either in the decentralization of industry or population. There are no New Towns in Manchester or Birmingham, Liverpool and Tyneside.

The character of existing cities will not be significantly altered or improved by the present New Towns. Most of this

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[1] Basildon has a special function. It must integrate a sprawling, haphazardly and speculatively developed area.

[2] Following the war workers were leaving the Trading Estate because of lack of adequate housing.

[3] F. J. Osborn, "Public Influences on Planning," *Report of Proceedings, Town and Country Planning Summer School* (Oxford University: 1951), p. 81.

decentralization would have taken place in any case.[4] Nor will these New Towns channel existing growth much more intelligently. The growth is occurring largely in other ways. And nothing prevents the replacement of the population and economic activities which move to New Towns. Empty housing and badly needed plant facilities easily attract newcomers; and the prohibitive acquisition costs confronting local authorities impel their reluctant acquiescence.

The original Advisory Committee for London Regional Planning in its *Report to the Minister of Town and Country Planning* declared:

"In the process of investigating the various centres of population in the Greater London Area, it was brought home to us that, in a large number of existing towns, redistributed population could be received to a greater extent than proposed in the Plan and yet the larger additions could still be integrated with the existing centres so as to form reasonably balanced communities. This still appears to be the view generally shared by the constituent authorities. Furthermore, as a result of our investigations we have reached the conclusion that new towns cannot be justified solely as being necessary to accommodate redistributed populations, because the whole of the redistribution could, if necessary, be affected in the existing communities within 50 miles of London. We agree, however, that a certain amount of redistribution should be dealt with by the development of new towns, as these will have intrinsic planning advantages and will form valuable examples for guidance in planning extensions of existing towns . . . ."[5]

This view was rejected by the former Minister. He insisted that ". . . . the provision of new towns [was] an essential part of the regrouping of the population and not merely . . . . a valuable example in planning."[6] But the evidence to date suggests that the program has proved unresponsive to Ministerial preferences. Indeed, the Town Development Act of 1952, which intends to facilitate the expansion of existing Towns, is a belated and limited recognition of just this fact.[7]

### *Administrative Relationships*

New Towns are being built by a relatively new type of entrepreneur, the public corporation. The aim was to create a more efficient and flexible instrument for the tasks ahead. Many of the existing local authorities would not have been willing or able to handle the novel and more exacting responsibilities. But sound as the corporate device may be, it has evidently not avoided certain problems, and even raised others, judging from official reports and the comments of key administrators.[8]

Thus, Ministry officials are often incensed that chairmen of Development Corporations, appointed by a Minister of the Crown to spend millions of pounds on a New Town, could be completely blocked by aggrieved local surveyors, or other "inconsequential" local or departmental officers or groups. Activity in Stevenage, as is well known, was held up

[4] Just the opposite in fact may be occurring for another reason. Jobs are advertised through labor exchanges. There is, therefore, a tendency for labor to come to the big cities to get jobs and homes in the New Towns. They may pass over residents in existing cities; and many may even stay in the big cities. Cf., L. E. White, *New Towns* (London: National Council of Social Service, 1951).

[5] *Advisory Committee for London Regional Planning Report to the Minister of Town and Country Planning* (London: His Majesty's Stationery Office, 1946), p. 11.

[6] *Greater London Plan Memorandum by the Ministry of Town and Country Planning on the Report of the Advisory Committee for London Regional Planning* (London: His Majesty's Stationery Office, 1947) p. 5.

[7] Lloyd Rodwin, "The Town Development Act: 1952," *Journal of the American Institute of Planners*, Part 1 and 2, Fall and Winter, 1952. The Minister of Housing and Local Development, introducing the Town Development Bill, said, "I would remind the House that in Professor Abercrombie's Plan for Greater London, which was produced as long ago as 1944, three times as many people from London were to be accommodated in town expansion as in new towns. A number of the latter are now well under way; and it is high time to give an impetus to the first method, on which I think we must rely for the main contribution upon expansion." *Hansard*, Parliamentary Debates, House of Commons, Official Report, Vol. U96, No. 41, Monday, 25th Feb., 1952, col. 726.

[8] Robert Vance Presthus, "A Note on British Town Planning Coordination," *The Journal of Politics*, 1952, pp. 471-478.

for years because of stolid local resistance.[9] Opposition by a strong and ancient local authority in Hemel Hempstead has resulted in sniping and bitterness and a dangerous gulf in local authority and Corporation relations. Welwyn, the second Garden City, was and still is bitter about the Ministry's decision to supplant the original limited dividend corporation. Every Corporation has been hampered in varying degrees by such friction. These experiences suggest that the difficulties would not have been much greater, if at all, if the larger local authorities also served as development agencies.

However exasperating and time consuming the local administrative relationships may be, they generally cannot be avoided. Development Corporations have limited powers. They must consult with and secure approvals from Local District Councils on building by-laws, on plans for sewage, open space, and sometimes water. They must do the same with the County Council for roads, surface water drainage, education and health services; with "Statutory Undertakers" for special services such as gas and electricity; with the Ministry of Health on planning, the cost of homes, water and sewage; with the Board of Trade on industrial developments; with the Ministry of Labor and Works on labor and materials; with the Agricultural Land Commissioner and the County Agricultural Executive Committees; and so on. Overlapping boundaries and multiple jurisdictions sometimes produce further complications. Sites for the New Towns were chosen presumably for technical and socio-economic reasons. Local authority boundaries were slighted, if considered at all.[10]

Satellite towns have still other administrative chores. Liaison must be established with officials of the neighboring cities to facilitate their "exporting" programs. Proper timing of the physical and financing arrangements is necessary. And in towns like Basildon and Hemel Hempstead where existing built-up areas are part of the New Towns a tremendous number of ad hoc decisions must be made by the local authority exercising the 1947 planning powers. All of these decisions require close consultation with the New Town Corporation. To this list must be added the countless meetings and conferences with private groups and organizations affected by the program.

It is not surprising that the 1950 Crawley report pointed out "with restraint" that all these activities "consume a great deal of time and effort . . . ." Appendix E of the 1949 report of the Crawley Corporation attracted some attention. It sets forth the following list of public consultations and approvals:

[9] H. Orlans, *Utopia Ltd.* (New Haven: Yale University Press, 1953), Chapters, 3, 5, 8 and 9.

[10] *Town and Country Planning 1943-1951*, Progress Report by the Minister of Local Government and Planning on the Work of the Ministry of Town and Country Planning, London, H.M.S.O., CMD 8204, p. 125. Basildon, for example, was in two Urban District Councils; Crawley must deal with three County Councils and three Rural District Councils; Aycliffe had three Urban District Councils. Aycliffe's Corporation complained strenuously about the administrative difficulties, but was finally able to secure readjustment of boundaries by a County Order. The whole site now lies in the Darlington District. Crawley's problem is more complicated since County boundary adjustments could not be settled on the local level. Originally the Local Government Boundary Commission was expected to effect reorganization since the task of securing necessary services such as schools, highways, sewage facilities, police and fire protection was proving slow and cumbersome. These hopes were dashed when the Local Government Boundary Act was repealed in 1948. Now the opportunity for readjustment depends on "private" acts approved by Parliament; and the prospects for quick adjustment, considering past experience, are hardly encouraging. There are also some other boundary issues. Aycliffe, for example, was built to serve its Trading Estate but is outside the administrative area of the Estate. Corby, too, the New Town in the Midlands, is outside the boundaries of the steel works which is the raison d'etre of the town. Cf., K. C. Edwards, "Corby, A New Town in the Midlands," *The Town Planning Review*, July 1951, pp. 123-131.

*Appendix E*[11]

(a) Consultations and approvals required for the execution of plans.

*County Council*

Town Planning approval
Approval to roads standards
Approval road surface water drainage
Approval to school proposals
Approval to health center and maternity child welfare proposals
Approvals to community buildings

*Parish Councils*

Street lighting

*Ministry of Health* (HQ)

Approval of houses for subsidy
Approval of sewerage proposals
Approval of water supply proposals

*Ministry of Transport*

Approval of classified roads
Approval of junctions of estate roads with classified roads
Approval of street lighting for classified roads

*Ministry of Labor*

Approval for labor and materials

*Rural District Councils*

Buildings by-laws and new street by-law approvals
Town Planning approval (as agents for the County Council)
Approval to sewers
Approval to open spaces

*Ministry of Health* (Regional (Office)

Approval of house plans
Approval of housing site development works
Permission to go to tender
Approval of tender

*Ministry of Town and Country Planning*

Acquisition of land (Section 5)
Proposal for development (Section 3 (1) )
Financial approval (section 12 (7 ) )
Starting dates
Licenses for scarce materials

*Board of Trade*

Distribution of Industry Certificate

*Ministry of Works*

(b) Authorities whose plans and projects have to be coordinated with those of the Corporation.

*County Councils*

Schools, health centres, clinics, police buildings and housing, fire hydrants and fire stations, classified roads and bridges. (with the Ministry of Transport)

*Ministry of Works*

Buildings for Government Departments

*Rural District Councils*

Public conveniences, bus stations, car parks, playing fields

*Parish Councils*

Street lighting

*Ministry of Fuel and Power and Gas Companies*

Gas mains and supplies

*South-Eastern Electricity Board*

Electricity mains, sub-stations and supplies

*British Railways*

Goods and passenger facilities

*Four Water Authorities*

Water mains and interim supplies

*South-West Metropolitan Regional Hospital Board*

General Hospital

*Transport Commission*

Road passenger service, bus stations, bus lay-bys

*Thames Conservancy Board*

Works to rivers and streams

The following year Sir Ernest Gowers Chairman of the Harlow Corporation, sharply complained that these consultations and approvals:

". . . . create machinery which is in some respects cumbrous almost past belief and which produces in profusion officials doing one after another work that one official could well have been trusted to do by himself. Development Corporations have too many masters."[12]

Ministry officials were also excoriated. Although Sir Ernest acknowledges that controls are necessary, he still felt obliged to declare that the Corporation's

[11] *Reports of the Aycliffe, Crawley, Harlow, Hatfeld, Hemel Hempstead, Peterlee, Stevenage and Welwyn Garden City Development Corporations* (for the period ending 31st March, 1949) (London, H.M.S.D., 1949), pp. 58-59. (Hereafter referred to as *Reports of the New Town Development Corporations*).

[12] *Reports of the New Town Development Corporations, 1950*, pp. 103-4. The writer was informed by an authoritative spokesman that all the chairmen of Development Corporations, except one, felt that supervision was excessive.

"progress has been unnecessarily delayed and its expenses unnecessarily swollen by prolonged scrutiny on the part of Ministry officials of matters of detail which might reasonably have been left to the Corporation's discretion. As has been recorded in this report, the Corporation's proposals for the development of part of the Mark Hall Neighborhood were with the Ministry for nearly five months before being approved and the Corporation has only just received approval [9th May, 1950] of a plan for the development of the East Industrial Estate submitted to the Ministry on the 1st of December 1949. Delays like these can cost money in two ways. So far as they may be caused by examination of detail of no great importance, they mean that the time of Departmental office staff is being wasted, and so far as they impose an unnecessarily long gap between the completion of a plan and starting to carry it out, they mean that staff which is ready to get on with the job cannot do so except by anticipating approval, and so risking a waste of time and labour if approval should eventually not be given. In the two cases referred to the five months' thought devoted by the officials of the Ministry to each project ended in acceptance of both, subject to slight modifications which effected a reduction of some £3000 in programmes estimated to cost nearly two million pounds.

"The Corporation recognizes, of course, that there are two sides to this question. The problem of how much control is proper for a Government Department to exercise over a statutory board is exceedingly difficult, and no generally accepted solution of it has yet been found. . . . .

"What can hardly be questioned is that the tangled thicket of controls and overlapping duties depicted in the Crawley Corporation's Appendix contains much that serves no useful purpose, and needs to be drastically pruned if Development Corporations are to be given a chance to build new towns in reasonable time and at reasonable cost."[13]

These lamentations, however, will probably prove futile. Ministers who are politically and financially responsible for a program will insist on adequate supervision and safeguards. Some delay is inevitable; this is perhaps part of the price to be paid for planned instead of haphazard development; and for democratic procedures rather than dictatorial ones. Policies and financial commitments must be checked for errors of omission and commission, and corrected, where possible. Cooperation and consent of all interested groups must be secured if the plans are ever to mature.

[13] *Ibid.*

### *Initial Development Costs*

Agile handling of initial large-scale development costs has long been recognized as one of the crucial determinants of the success of New Towns. One of the decisive reasons for shifting the major development responsibilities to central government corporations was to avoid the frustrations of under-capitalization. But the financial formulas devised are still inadequate.

Development Corporations receive loans and grants from the Ministry of Town and Country Planning. These funds are made available by the Exchequer. A maximum of 50 million pounds can be encumbered during the first five years. The loans are repayable in 60 annual installments at 3 percent interest. Capital payments, but not interest, may be deferred during the first five years. Since little or no revenue is available for the first year or two, grants are made by the Ministry. They amount to 50 percent of the net revenue deficit during the first year, and 25 percent during the second year.[14] These grants are designed to cover most of the initial organizing expenses. Expenditures not covered by grants are added to the total capital cost of the program. In addition, the Corporations receive the national subsidies authorized under the 1946 Housing Act and also additional subsidies equal to the contributions which local

[14] In some cases, e.g., Hemel Hempstead New Town, 50 percent grants have been made for the first two years.

authorities would ordinarily provide. Subject to Ministerial approval, the Corporation can, therefore, hire staff, prepare plans, make land purchases, contract for the provision of essential services and start building.

But the problem does not disappear simply because the Corporation has funds at its disposal. The financial burdens imposed on the local authorities, the Statutory Undertakers[15] and the residents must also be reckoned with. When local authorities or Statutory Undertakers must undertake costly expansion of existing plant and facilities to provide the necessary services, they are often reluctant to impose such charges on their rate payers. They often refuse to cooperate unless the Corporation is willing to pay "a fair share" of the costs. In Aycliffe difficulties were experienced with the Parish Council on the division of lighting costs and on the provision of necessary sewage facilities. In Crawley the £124,000 river works needed to prevent the surface water carried from the New Towns from causing floods posed a delicate question about sharing of costs. In Hemel Hempstead prolonged negotiations were conducted for the expansion of the local water undertaking by the Town Council and the laying of an enlarged trunk sewer up the Gade Valley by the Colne Valley Sewerage Board, both services required far in advance of need and thrusting heavy capital expenditures on the local authorities. Essex authorities were shocked by the school problems imposed by Basildon and Harlow. And in Stevenage, the Urban District Council would not proceed with the needed sewerage works until adequate guarantees of financial assistance were forthcoming.[16] Other instances could be cited.[17]

Difficult as these issues are, they can and are being negotiated and settled by the Ministry. What is not yet solved is how to deal with the burden that these capital investments impose on the residents and economic activities of the New Town. The services must be built in advance, and usually in scale with the requirements of the future town. Unlike the ordinary speculative development, higher capital costs are inherent in the initial stages of any long-term, efficiently planned development. Until the Town has grown sufficiently, an excessive burden may fall on the residents if the cost is assumed by the Corporations. Local authorities and Statutory Undertakers have no desire to assume any significant portion of these costs. This reluctance is quite understandable. They are Corporation problems, and other agencies do not wish to be saddled with them. The alternatives open to the Ministry are either an intolerable load on the rates for the residents of the New Towns; or a disproportionate and unlikely assumption of these costs by the local authorities and Statutory Undertakers; or deferred payments on a long-term loan; or a subsidy.[18]

[15] Statutory Undertakers are generally the equivalent of our public utilities.

[16] *Reports of the New Town Corporations*, 1949, pp. 12, 35, 99, 134.

[17] Some authorities have been subject to sudden burdens. Hertfordshire, though prosperous, has three new towns, two L.C.C. out-county estates, and several county towns are being expanded. The County Council will get little return from these developments, but must invest heavily in capital services, and the existing population must help foot the bill. Cf., D. R. Childs, "New Towns Reports—1951," *Journal of The Town Planning Institute*, February 1952, p. 92.

[18] This problem has been studied by a Working Party under the chairmanship of the Deputy Secretary of the Ministry, Dame Evelyn Sharp. She has advised me in a letter dated 27th February 1952 that they ". . . . were not at all successful, and such conclusions as we did reach were not generally agreed." In Scotland the extra costs are capitalized, i.e., added to development charges, not rent; but the Treasury has not yet agreed to write off these charges. The reckoning on costs will come when the towns are transferred from the Development Corporations to the Local Authorities.

This difficulty in allocating costs is really the result of a drastic change in the revenue base. In real terms, the costs of these New Towns are not much greater, if at all, than ordinary speculative developments. Except for cities with considerable underemployed capacity in utilities or services, the actual costs might be assumed to be approximately the same.[19] When urban expansion occurred in the past, the burden was distributed among the population of the entire urban area. It was not inordinately heavy, unless investments were made prematurely; and then bankruptcy and defaults on municipal bonds resulted. What complicates the New Towns' financial problem is their political independence and the installation of services far in advance of actual use. There is no significant supporting economic base. Risks mount if development occurs too slowly or fails to materialize. Heavy "waiting" charges will also be incurred, adding to the expense of New Town development, especially if the government does not subsidize these costs. Possibly the outlays will be recovered in the final stages of development: that is often the practice in private real estate operations. But the Treasury administrators are becoming increasingly nervous as the Development Corporations incur increasing debts with promises to repay most of it, perhaps in 15 to 25 years.

### *Rents*

New Towns also have a rent problem: this, despite the Corporation's receipt of the 1947 Housing Act subsidies plus an extra grant from the central government equal to the subsidies ordinarily provided by the local authorities. Almost every Development Corporation has voiced its anxiety to the Ministry about the probable rent levels for Corporation houses compared to the prevailing levels in existing housing, and in some cases even in new council estates. Why?

Corporation houses, unlike those of the Local Authorities, are subject to the Rent Restriction Acts. Rents fixed on new houses cannot be raised without considerable difficulty. Since higher maintenance costs in the future may play havoc with low rents, Development Corporations must establish rents which also take into account rising price trends. The government hesitates to tamper with the Pandora's box of rent control legislation.[20] Rightly or wrongly they fear the aftermath: higher rents, higher wages, higher prices, reduced exports.

Development Corporations also have no pool of additional council houses or cushion of local rates. Under the Housing Act of 1936, councils with a stock of existing housing can lump together the varying subsidies of all the separate housing acts. They can, therefore, establish more equitable and flexible rent levels for all the available housing. Rents of housing built during a period of high price levels can be reduced; and similarly rents of lower cost housing can be increased. Development Corporations, however, have no alternative but to charge what are comparatively steep rents for their dwellings.

Local authorities, moreover, can avoid charging the tenant the full economic costs for their houses by simply increasing local rates to offset some of the deficits. The costs are thus distributed more equitably. They can also charge expenses of the Architecture Department or the costs for roads, parks and the like,

[19] This question warrants more research. I am generously assuming that possibly higher administration, road and utility costs for New Towns are offset by other efficiencies and economies.

[20] The restrictions have also contributed to the abandonment of District heating in Harlow since the charges for heating might rank as rent under the Rent Restrictions Act and future increases in fuel costs would not necessarily permit increased rents. *Reports of the New Town Corporations*, 1951, pp. 178-79.

to overhead costs for the city. Many years will pass for most New Towns before such a reservoir of local rates exists. Besides, for a long time the rates will be heavily burdened because of the initial capital expenditures.

Some Development Corporations, like Harlow, Crawley and Newton Aycliffe have tried to build a few modern flats. They wanted to reach certain densities; to avoid building on good farm land; to provide for childless families and single persons; to achieve a more satisfying architectural variety. But the Corporations claim that such flats have generally proved more expensive;[21] and, since they are built on vacant land, they do not qualify for the higher subsidies which the 1946 Housing Act made available for the more expensive high density flats in ce ntral areas. Moreover, the tenant to date seems to prefer houses and will not willingly pay more for flats.[22]

Higher labor costs are another reason for the more expensive housing. Most of the New Towns are sited approximately eight to thirty miles from the existing cities. Labor today is a scarce resource. To attract the necessary labor to the New Towns extra payments must be made for travel. There are also additional costs for temporary housing and canteens. Often it has been necessary to reserve permanent housing for part of the construction force to retain key employees. But even if labor were less scarce, some of these additional costs would probably be entailed.

Also contributing to higher rents is the experimental character of New Towns. The Corporations tend to get better architects who thrive on innovations to enhance their reputations and the development of their profession. These innovations are usually expensive, at least in the initial stages. Builders generally raise their charges to cover anticipated contingencies. And, quite often, the builders are those who usually do not get the best contracts of existing authorities and therefore they are possibly not the most efficient in construction operations. Overhead costs, too, are fairly high in the early stages of town growth.

Sir William Beveridge in his 1951 Report as Chairman of the Aycliffe Corporation said that the Corporation was perturbed by the ". . . . steadily rising building costs. . . ." He added:

". . . . this disquiet of mind has recently changed to alarm in consequence of the recent rapid rises in material prices and building workers' wages . . . . The recent upward surge in building costs fills us with apprehension that resultant rents will prove to be too much for the workers to pay."[23]

He also observed sadly in a lecture at the University of London:
"One after another, ambitious schemes for making the perfect town fell by the way or are delayed. At Newton Aycliffe we hoped to make a smokeless town with district heating, but we found the costs so high that we could not make it a compulsory addition to the rent of every person in town. We wanted to build a good theater for community drama

[21] *Reports of the New Town Development Corporations*, 1950, pp. 56-57, 94. Crawley Corporation asserts flats cost approximately £100 more than houses. The word "claim" is used advisedly because the whole issue and technique of analyzing costs is rife with controversy. Aycliffe was forced to abandon its plan for an eight-story block of self-contained service flats for single persons "on account of cost," p. 10 (1951 Report). A block of 18 flats is being planned instead. Harlow too had to reduce the number of flats. Incidentally, the Corporations assert that most tenants from large cities want to live in houses, not flats.

[22] *Reports of the New Town Development Corporations*, 1949, p. 46. Of course, if there are strong social arguments in favor of flats, the cost could be reduced if the Minister allowed in appropriate circumstances the use of higher subsidies for these more expansive developments.

[23] *Reports of the New Town Development Corporations*, 1951, *op. cit.*, p. 11; and p. 231. B. L. Richards estimates that, of the families with self-contained accommodations, 85 percent paid a higher rent at Crawley, the extra amount averaging 10 s. per week. B. L. Richards, "Some Practical Aspects of New Town Development," address at General Meeting of the Royal Institution of Chartered Surveyors, February 11, 1952. Lord Beveridge also deplored the rise in the interest rate from 3 to 3-¼ percent (now 4-¼ percent) and the government requirement that land or buildings must be sold to government Departments and Local Authorities on specially favorable terms.

but the cost was frightening. We thought of a first-class hotel, but we find ourselves reduced to a public house with no rooms for anything but drinking."[24]

As long as a critical housing shortage persists, most of the houses will probably be occupied. But occupancy rates alone can be misleading. They may still conceal the fact that many potential tenants with high priority will not be able to live in the New Towns; that many families living in the New Towns will be paying a far higher portion of their income for rent; and that, when the pressure abates, the vacancy ratio may be high unless rents are cut.

### *Balanced Towns*

The negative character of British planning prior to World War II was generally considered its greatest failing. But it is far from certain that the "plenary" powers sought and obtained by town planners after World War II will be adequate to achieve their most dramatic and most positive objective: internally "balanced" towns, with an ample variety of industries, shops, population, and different kinds of community, recreational and social facilities. Quite aside from the merits of this ideal a combination of obstacles exist which may well prevent the testing of this challenging assumption on how to organize a democratic and socially desirable physical environment.[25]

Balanced towns do not grow automatically. To get such balance, ordinary market and social phenomena must be tampered with or reorganized. If the right industries don't come, then they must be induced to come. Too many or too few shops are taboo. And one must try to get the "right" occupational skills, the "right" distribution of income, sex and age groups, even the right mixture of religious, ethnic and possibly even color groups. Then, too, the appropriate community and cultural facilities to serve all these needs must be secured. The goals are not quite as difficult as they seem because the "tolerances" are often fairly gross. But neither is the task easy, especially in the circumstances confronting the British planners.

Take the key problem: industrial location. Before a factory can come to the New Town, it must get a license from the Board of Trade. But the Board has prior and more compelling commitments in favor of strengthening the "Development Areas" and promoting export activities. These responsibilities are not necessarily consistent with the New Towns policy; but they are equally, if not more crucial, and they certainly are more sensitive to political pressure. Some towns like Crawley have thus far done quite well in securing industrial activities. Others are seriously disturbed. Harlow has been impatient about the firms coming to its area and the difficulties they face in getting the Board of Trade's cooperation.[26] Hemel Hempstead has been worried about the disproportionate number of unskilled, semi-skilled and female workers in the present labor force, and wants to remedy the situation. Stevenage, the first New Town, opened its first factory only in mid-1952. These problems complicate the larger general question of securing the most appropriate, stable and varied activities for these Towns.

Though the type of industries will be important in determining the kind of people who come to the New Town, so also will the type of housing. If the

[24] Lord Beveridge, *New Towns and the Case for Them* (University of London, Senate House, 4th December 1951), pp. 11-12.

[25] For a recent critical, but somewhat one-sided, appraisal of the notion of balance by an anthropologist, see H. Orlans, *op. cit.*, pp. 81-95.

[26] *Reports of the New Town Development Corporations*, 1950, p. 100. However, intervention of the Minister has helped somewhat in 1951, *Report of the New Town Corporation*, 1952. pp. 181-182.

housing costs too much, and this appears likely, how can the Town expect low income tenants? Letchworth, the first Garden City, labored under this difficulty because it did not even have the advantage of housing subsidies; and it is now tagged as a middle class town. The government's housing policy may well produce similar results. The aim was and still is to stretch materials and labor as far as possible to produce the maximum number of houses. Expensive homes were reduced to a minimum and often not even provided; and so the wealthy were largely excluded from the New Town, assuming any significant number were even willing to come. When they did come they wanted their own type of houses in their quarter of the city.[27] Though most of the Corporations are trying to build three or four types of houses roughly corresponding to the needs of the major income groups, the odds would appear to be in favor of the one-class, middle-income suburb emerging as the probable end product.

Once the character of the town is established, changing its pattern appears to be more difficult. Welwyn, the second Garden City, was faced with that issue in the "Great Divide" of the railroad tracks. On one side were the worker's homes; and on the other the homes of the middle classes. The Corporation is now trying to modify the patterns by building some middle-income flats on the workers' side, but not vice versa. New Towns Corporations may have to resort to similar remedies if present policies continue. First priorities now go to key employees of the plants locating in the Town, and these employees are usually in the middle-income group. Equally high priorities go to the skilled construction workers to keep a permanently active labor force in the present tight market. Both these priorities often override, at least at the outset, the claims of high priority tenants on council lists. Such a situation not only creates friction but tends to stamp the initial character of the Town's development.

Add to this the difficulties in providing for various special groups. The needs of the aged will generally be neglected in the first few years. Many of the unmarried single individuals, if they stay, may be unhappy because of the absence of many of the attractions of the large city, if the experiences of Letchworth and Welwyn are any guide.[28] And it is not at all clear how the planners will ensure variety of religious, ethnic, nationality or regional groups—or what the right variety is. The problem is further aggravated because the austerity policy has almost eliminated the provision of community buildings and facilities. Most churches face bleak economic prospects and haven't the funds to build adequate structures to serve their diminishing flocks. The task of promoting satisfactory relationships amidst heterogeneous groups is not made easier by inadequate facilities and by the absence of any positive program to help establish and maintain such harmonious relations.[29]

[27] In Newton Aycliffe, for example, the original intention was to have families of many income ranges living around a village green. The limited experience indicated that the higher-income groups would not build expensive houses in neighborhoods of poor houses. So a "West End" is being planned. The chairman of the Crawley Development Corporation pointed out that "there was so much semi-developed land in the country available for building that land in the New Towns at £850 for a quarter acre could not compete favorably with it financially." Sir Thomas Bennett, "Residential Neighborhood Development," *Housing Centre Review*, Nov.-Dec. 1952, p. 20.

[28] L. E. White, *op. cit.*, p. 28. For a further discussion of these issues see T. Bennett, *op. cit.*

[29] The planning of the Harlow town center poses special problems. B. L. Richards points out that if demolition of sound buildings occurs, it is very costly. And though the Corporations may erect the shops, the public buildings are provided by other agencies over a number of years and may not conform to plan. Also development of the center takes place over a long period of time. If care is not exercised, it will not be built as planned.

*Socio-Economic Analyses*

Almost every aspect of the New Towns' physical development depends upon social and economic data and analyses. The Harlow report states simply that their objective is to produce towns which are ". . . . socially well-balanced and economically sound."[30] Hemel Hempstead's report notes that as their program "has moved from planning to construction, the relation between physical development and social and economic problems is clearer than ever."[31] Granting that these statements are trite truisms, it is astonishing to find that the New Towns devote so little of their energies to evaluating their social and economic problems and have so little interest in improving their techniques of analysis.

New Town Corporations are not restricted to a forecast of the economic activities which will locate and thrive in the town and what the characteristics of the residents will be. Their assignment is to build a town of specified size with a variety of jobs and population. Within the limits of their capacity to attract population and industry, they can and should attempt to steer in certain directions. The Corporations also have some flexibility in their building program since a few reasonable ranges of income, family sizes and types of commercial and industrial activity can be established as first approximations. Additional facilities can be provided later in response to felt needs. But steering is generally surer if the direction of the current is understood. Every Corporation's policies might be helped by more awareness of national and regional economic trends; the potential resources of the community and its locational advantages; the type of industries that might be efficiently located in the town; the kind of activities that would provide stability for the economic base; the probable characteristics and preferences of the housing market; the efficiency of building operations on the site, and the like.

Perhaps much of the data collection and analysis would have to be handled by the Ministry or the Board of Trade, and then funneled to Development Corporations for detailed study and refinement. Such joint responsibility was in fact the original intention. But except for occasional local surveys and some fact gathering by the Ministry little attention has been paid to these tasks. The staff composition of the Development Corporations reflects this lack of interest. For all of the Corporations, the chief responsibilities of the principal administrative staff fall in engineering, finance, architecture, horticulture, and law. Social scientists, such as economists and sociologists, are rarely employed; and aside from some initial surveys, no provision is generally made for rigorous analytical research to guide policy decisions.

In Stevenage, a Social Development Department was established "to undertake social and economic research on problems affecting the town's development to deal with problems of public relations and to plan for the social integration of the new community." But the policy was later reversed. In Peterlee too, the Social Development officer was dismissed. Still other towns never saw the need. The Stevenage Corporation's report acknowledged that:

"The department did very valuable research both in connection with the Master Plan and on problems of long-term social development; but experience has shown that after the initial period of planning, responsibility is better developed upon other departments which are more directly concerned. At the same time

[30] *Reports of the New Town Development Corporations*, 1949' p. 65.

[31] *Reports of the New Town Development Corporations*, 1950, p. 133.

it became clear that both public relations and social development in the broad sense involved, on the one hand, matters of policy which must be a direct concern of the Corporation and its chief executive, and on the other hand, that every department must concern itself with social implications of every technical decision. In fact social development is not a thing apart and must be a direct concern of every one of the Corporation's officers."[32]

But town planning has graduated beyond the Master Plan stage: it is a continuous process. For example, since many of the assumptions of the Stevenage Plans were changed, rethinking of the implications for the plan would be necessary.[33] Most operating Departments of the Corporation simply do not have the time and are not equipped to handle these responsibilities. Private builders may drop research to scrimp on costs. For the New Towns to emulate this practice may be shortsighted indeed. Private builders generally excel in cutting costs; but what will the planners have to show for their penny pinching?

One might have thought that, at least in the building programs, the brilliant forays in operational research would have been exploited by the Corporations or by the Ministry in behalf of the Corporations, if not for housing policy generally. Dr. J. Bronowski has presented convincing evidence that the studies were able to provide valuable cost data in a form usable to the builder. Some examples are the variations in output associated with bonus payments, the size and number of houses, the type of site and the like. But this effort also miscarried. Though inexpensive and "practical," the work languished and disappeared.[34]

*Concluding Observations*

This paper has dealt only with the problems of New Towns. The accomplishments, actual and potential, will be evaluated elsewhere.[35]

To date the experience of New Towns indicates they are handicapped by their limited number and influence; by administrative barriers resulting from too many authorities and too limited jurisdictions; by overemphasis on the single independent New Town and relative neglect of the relationships with the existing large city; by unsolved long and short-term cost allocations; by conflicting policies upsetting timing and balance; and by an apparently uncritical reliance on most basic policies, or at least such limited appreciation of the difficulties, that rigorous analysis, especially of the socio-economic problems, is considered expendable and often overlooked.

Solutions may be difficult and perhaps even improbable; but none of these difficulties are irremediable. The solutions may range from administrative changes, such as permitting local authorities to participate in the process of building New Towns; policy changes, such as recasting some of the directives governing Ministries such as the Board of Trade; fiscal changes involving willingness to shoulder the costs inherent in New Town development; and, not least important, the creation of an analytical mechanism that will contribute to the clarification of objectives, the reduction of costs, the testing of policies and the evaluation of difficulties before they assume disastrous proportions.

[32] *Reports of the New Town Development Corporations*, 1950 p. 185.

[33] L. E. White, *op. cit.*, p. 42. There may have been personal or other reasons for disbanding the office, but the explanation actually given is absurd. For a review of the research limitations in planning see, L. Rodwin, "The Achilles Heel of British Town Planning," *The Town Planning Review*, April 1953.

[34] For an excellent short description of the achievements of these research studies, see J. Bronowski, "The Application of Statistical Techniques to Building Research," *Proceedings of the Conference on Building Research*, E/ECE/122, E/ECE/-IM/HOU/BR/2, United Nations Economic Commission for Europe, Geneva, 1950, pp. 137-151.

[35] This paper is part of a larger study now in preparation.

# Mechanics of the Urban Economic Base: A Classification of Base Types†

*By* RICHARD B. ANDREWS*

WITHIN the past twenty-five to thirty years the concept of the economic base as applied to cities has grown in familiarity and has been employed with increasing frequency and success in attacks on problems in city planning.

The urban economic base, as currently conceived, refers to those activities of a community which involve the export of goods or services to firms or individuals who live and gain their incomes from locations outside the economic limits of the community in question. The trade effect of this activity is such that a net inflow of dollars is created for the subject community which either balances or more than compensates for the spendings of the community for goods and services which are not locally produced and therefore must be imported or are wholly produced and consumed locally. The planner's concern with these economic relationships arises in the fact that total population tends to rise and fall with overall shifts in the employment size, wage weight, and net earnings of the base. Moreover, qualitative change in the base, in the sense of change in the kinds of activities carried on, is likely to have a very definite, though possibly not immediate, effect on the pattern of land use demand (quantitative and qualitative) in the community.

The fact that the urban economic base concept in its present form is relatively new in part explains the associated fact that in many respects theoretical aspects of the concept are either inconsistent or are inadequate in their role of explaining the functioning of this sector of the urban economy.

In the opinion of this writer, one of the more important inadequacies of the base concept is to be found in the classification of the base activity types that may be identified in the modern urban community. Inadequacy of classification can be of practical significance to the city planner in that it can greatly complicate his work and, at worst, dilute the accuracy of his decisions. Up to now classification has been more nearly a listing of different urban economic functions arranged by activity type that may stand in a basic relation to their communities. Unfortunately, a few types, such as manufacturing, are thought of rather automatically as basic in nature whereas the truth of the matter is that they can be either basic or service.

Hoyt presents a concise listing of urban base activity types in which he distinguishes the fundamental employment and income sources that might be found in the modern city. He includes:[1] (1) manufacturing, (2) trade, (3) extractive industries, (4) governmental activity, (5) educational institutions, (6) resort and amusement centers, and (7) retirement.

If, as is now commonly argued, the essential economic characteristic of base activity is exportation there does not as yet appear to exist an adequate classifi-

† This is the third in a series of articles which have appeared in this journal under the general title of the "Mechanics of the Urban Economic Base" and written by the present author. The first one, see May 1953, pp. 161-167, discussed the historical development of the base concept; and the second article, see August 1953, pp. 263-268, examined the problem of terminology.

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[1] Arthur Weimer and Homer Hoyt, *Principles of Urban Real Estate* (New York: The Ronald Press Co. 1939), pp. 49-52.

cation of the different forms which this process assumes. It appears preferable, therefore, to classify the various varieties of bases under headings which appropriately distinguish the peculiar nature of the export activity involved.

Again, it is assumed that a classification presented in this form will highlight for the city planner the fact that planning for one classification of basic activities may be quite different from the planning that would be done for another due to the peculiar economic actions of the bases of that class. At present there is a tendency to plan for each variety of base rather than for broad classes. Whereas this is necessary up to a certain point, broad classifying would tend to simplify the work of the planner in that he could generalize more of his policies around broad categories. In many instances, however, it might be unrealistic to plan for a pure class since there often occur activity linkings not only within but between classes. Clearly, not enough is known of the economic actions peculiar to each base classification so that a planner might yet proceed on the basis of tested cases but the classification will give him a simplified, organized basis for procedure while a body of knowledge continues to accumulate. At the same time classification will give the researcher a more coherent, organized point of departure not only for assisting in building a body of knowledge but also for testing more adequately the theoretical reasoning of base theory and filling in the gaps which appear within it.

Since urban base activity assumes the export of some good or service beyond the economic boundaries of the community, thus producing a net inflow of income, classification of base activities might logically proceed according to the different patterns assumed by export activity. These export patterns appear to be arranged in two general groups. The first might be a classification strictly according to the genre of export: (A) export of goods, (B) export of services, and (C) export of capital. But from the standpoint of the city planner it would seem appropriate to introduce a heavier geographic emphasis into the economic picture indicating the two principal space relationships of consumer and producer, thus: Export Patterns of Goods, Services, and Capital; (Class A) Movement of G-S-C to Consumer-Producer, and (Class B) Movement of Consumer-Purchaser to G-S-C. Let us briefly review the makeup of each of these classes with the objective of clarifying the argument as to content and relationship of factors.

### *Class A Basic Activities: Movement of G-S-C to Consumer-Purchaser*

(1) *Movement of Goods to Consumer-Purchaser.* Those basic activities of a community which are engaged in the export of merchandise beyond the borders of the economic area in which they are located are, perhaps, most familiar to the average observer and most easily identifiable as "basic." The goods which are exported may be either consumer or capital goods and in a raw, semi-processed, or finished state.

The merchandise is physically exported on order to the customer who lives or operates beyond the limits of the community in question. An example of this type of relationship might be a shoe factory in a small city, a farm implement assembly plant in a city of the farm belt, a steel plant in Gary, Indiana, or the mail order firms of Chicago.

(2) *Movement of Services to Consumer-Purchaser.* Certain basic activities of urban areas operate by exporting their services in some form beyond the economic boundaries of the community. Situations of this variety are exemplified

by insurance sales and servicing, legal aid, correspondence education, financial market services, research centers, also state and, in most cases, county legislation.

A unique and actually distinct phase of service export to the consumer-purchaser is found in the case in which the creator or seller of the service personally takes the service outside the economic area in order to dispose of it. Commuter communities are the best demonstration of this relationship. Here the executive, office worker, or factory hand journeys from his own small community to the central city to market his skills in both the basic and service activities of the larger settlement. This classification is clearly based on special geographic-economic distinctions that may have to be made within a larger base area. For example, we may say that Yonkers, New York is *within* the base area of the City of New York and hence may not have much export activity. But in itself as a separate urban node and planning entity it exists through its ability to export services to Manhattan—a relationship that is not diluted by the fact that the "true" source of basic activity appears to lie in Manhattan. In this special situation Manhattan must be looked upon as the market for Yonker's services. In the same sense the nation at large is the market for many of the goods and services produced in Manhattan.

(3) *Movement of Capital to Consumer-Purchaser.* Customarily the idea of base activity is exclusively associated with the export of goods and services. However, it is clear that if the export concept of the base is to be pushed to its logical conclusions it must also embrace activities of capital export which yield a net inflow of earnings to the community.

In this category, therefore, must be placed familar investment activities which earn a return from outside the area in the form of interest on bonds, dividends on insurance and stocks, net rents and mortgage interest from real estate. In accordance with the customer relationship followed in the classification here under discussion it is assumed that capital is exported under the initiative of the local individual or firm of the community or has been extended on request to the consumer via long distance communication rather than in the form of a face-to-face transaction.

Of a slightly different nature would be returns in the form of pensions and social security payments. A part of these payments would, of course, merely be a return of capital to the claimant. However, other portions would represent interest earned on pension deposits and matching shares paid by employers not operating within the base area.

Yet another community bookkeeping transaction which might be included in the concept of capital export is that in which tax payments exported to the state or federal government are more than balanced by an inflow of school, highway, hospital, airport, relief, river and harbor aids. Most communities would not show a net gain from this source but there are a few that could because of low tax payments traceable either to low average incomes, to heavy exemptions, or to a low volume of trade on which a sales tax might be based.

It is unlikely that in any particular instance capital export would be the most important element of a community's economic base. On the other hand, it will be a tangible element in nearly every community and in some may approach significant proportions. For example, the common garden variety of rural trading center usually has a heavy seasoning of retired farmers and tradesmen who live on the proceeds of outside

investment. Then, of course, there are the specialized retirement communities of Florida and California where the economic weight of capital export income is even heavier.

*Class B Basic Activities: Movement of Consumer to G-S-C*

Economic movements of Class B activities can be identified in a briefer fashion than these just covered due, not to lesser importance, but to a certain duplication of conditions.

(1) *Movement of Consumer to Goods.* This relationship has reference to the familiar situation in which the consumer enters the base area, purchases, and carries away the merchandise he desires. The most obvious example of this type of base-consumer relationship is, of course, the retail trading center.

(2) *Movement of Consumer to Services.* In most urban areas this is the commonest technique for the export marketing of services. It is one in which the consumer enters the area where the basic activity is located and, for the most part, consumes the services on the spot. The impact of such a relationship upon not only the planning policies of the community but also upon the volume of attendant or auxiliary purchases will vary with the time spent by the consumer in the area. The time element involved will vary from the one day or its fraction devoted to obtaining medical or other personal services to such extremes as the long-term tourist vacationer or full-time university student.

(3) *Movement of Consumer to Capital.* In this circumstance the principal distinction from the other export relation of capital is that the initiative for export comes from outside the area and the negotiation is on a face-to-face basis. The situation is the one familiarly found in which the commercial bank or other local financial institution arranges a business, real estate, or personal loan at the direct request of an individual (or firm) from outside the area who appears at the institution office to participate in the transaction.

*Service Activity Classification*

Although the main objective of this paper is that of classifying economic base types and indicating the significance of classification, increased perspective of this aspect of the urban economy is gained by an introductory look at a possible classification of the economic complement to the base—service activities.

As the discussion thus far has emphasized, the basic activities of a community are involved in export transactions.[2] Service activities have a negative sort of identification in that their end transactions are all local, they do not export. These local transactions are with the population of the community in general, with basic activities, and with other service activities.[3] For the sake of maintaining the consistency of classification on the basis of trade flows it seems proper to think of service activities as constituting two general types.

The first service activity type, which may be called Class 1, is that which imports goods, services, and capital for local processing and distribution, or just distribution. This classification would include, for example, the dry goods merchant as an importer of finished goods, the stock broker as the importer of stock quotations (services) on which ultimate security purchases may be based, and the insurance company correspondent who imports capital for real estate loans. Importation by service activities could also include raw materials import by

[2] Basic activities do, of course, make direct imports of goods and services but their finished product is exported.

[3] Again it is recognized that there are few pure types (either base or service) and that a great many so-called service activities do some exporting.

fabricators such as bakeries, printing firms, and building contractors. Restaurants would, perhaps, represent a slightly different sort of raw material processor. Many other gradations within this type could no doubt be identified.

A second general classification of service activities, Class 2, includes those whose goods fabrication, service production, and capital origination and distribution is entirely local, involving no direct importation of any great significance. Here pure types may include sand and gravel extraction, truck gardening, the practice of law and medicine, barbering, and local lending and investment of funds.[4] Included in this same class but of a slightly different variety would be those local firms which are almost entirely dependent for their goods on local large-scale base enterprises. For example, there are the local meat markets that draw heavily for fresh and packaged meats on a local packing plant which is principally in the export business. The same relationship might exist between small local independent groceries and a large-scale grocery wholesale house. Here again we see a demonstration of the previously mentioned fact that there are few pure basic or service types. Whereas the packing plant and grocery wholesale house are predominantly basic they may play a definite service role in the community.

This discussion also brings up the question of linked activities. We say, for instance, that the automobile-starter factory which sells its product to the automobile manufacturer in the same community is a linked industry. If the line of argument thus far presented is followed rigidly, we would classify the starter factory as a service activity which does not export. However, it is felt that from a more realistic point of view the starter factory should be considered basic in that there exists only an organizational line between the starter and automobile manufacturers both of whom are engaged in the final steps of putting together a finished exportable product. Identification of sub-linkings as basic enterprise could be said to extend through all stages of a particular manufacturing process found within a community. These stages are frequently separated only by the distinctions of horizontal organization. However, in order for these sub-links to gain identification as basic, nearly all of their output would have to go to higher links and ultimately into the exported product. It is unlikely that there would be many links of one industry within a single community due to an absence of complete monopoly of locational advantages but it is likely that the number of links involved may very well be in direct ratio to community size, scale of operating units of the enterprise, and the like.

### *Conclusions*

To summarize, the purpose of classification is, in very general terms, that of clarification of the conception under consideration by a simplified, logical ordering of the various forms of that conception. It is a necessary first step, along with organization of terminology, in the scientific approach to any problem or field of inquiry. Successful and meaningful classification that will act as a reliable guide to research and field action must, moreover, have as its mold the strategic factor of identification, which in this case is export activity.

It is the hypothesis of the approach presented here that each of the two major base classifications described in preced-

[4] In most of the cases mentioned there is involved mechanical equipment that must be imported but the raw materials and the heaviest part of the investment leading to the finished product is of local origin. Also persons living on retirement incomes gained from local investments would be considered as a part of the service element of the local economy.

ing paragraphs has a pattern of social, economic, and geographic needs and action that varies only slightly from one subtype to another. The city planner might, therefore, order his master plan and day-to-day actions in such a way that they will conform with the peculiarities of the base class or classes found in his community.

While the form of base classification recommended in this paper has not been tested it does suggest some rather broad possibilities of application in the field of urban planning. The examples of application that come to the writer's mind are not completely satisfactory but will at least give more concrete form to the general ideas discussed thus far.

If, for example, the city planner finds that the basic activities of his community are strongly oriented toward Class A (Movement of Goods, Services, and Capital to the Consumer) and linked base enterprises, he should be prompted to devote much attention to conditions of transport and communication within the base area and between the base area and the areas to which exports move. Specifically, this would suggest concern for rail yards, siding systems, warehouses, truck routes and terminals, carrier registration systems, insurance rates, commercial air transport facilities and rate control. In the field of communications, questions of telephone, telegraph, and cable rates should hold a position of great importance in his plans.

A question arises here concerning the relationship of the economic base's complement—service activity—to the subject of classification and resulting problem fields for the planner. At this stage of hypothesis development it can be said that service activities of Class 1 (*import* of goods, services, and capital) seem closely associated with Class A base enterprises in that their needs and actions in relation to the movement of goods and services and to communications are very similar. Class 2 service activities (local origination of goods and services) do not, in the present opinion of this writer, seem to have a generalized planning focus such as that noted for Class 1. Their needs and actions are apparently those of producers who, in a negative sense, can be said to have relatively limited requirements for storage space, transport and long distance communication. Class 2 activities which obtain their goods from local base enterprises are, of course, greatly concerned from a planning viewpoint with programs designed for their supply sources.

It appears to this author that Class B base activities (Movement of the Consumer to Goods, Services, and Capital) provide more complicated situations for the planner than those found under Class A. The essence of the problem is simply that communities with a dominant Class B base are called upon to handle the customer in person as well as the goods and services being marketed. Here, of course, the complexity of the problem is in direct proportion to the length of time that the consumer is in the community purchasing (and perhaps consuming on the spot) his goods or services. The extremes of this situation range, as noted earlier, from the Saturday night out-of-town shopper in the retail trade center to the university student who is a "customer-resident" of the community for nine months of the year. The demands on the city planner are clearly increased as a result of this situation. Class B base communities involve far greater concentration on housing supply and distribution, and on zoning that will adjust to these housing needs and to the supplementary commercial demands of long-term consumers. Peak load problems of traffic and parking are much more

likely with Class B, not to mention more detailed contingent problems of building codes, fire and police protection, recreational area allocations, and even public school planning.

Capital export operations are not likely to cause the city planner difficulty in either Class A or Class B situations. The greatest likelihood of trouble, however, again arises with Class B when, as in our larger cities, capital export operations combined with other financial service-export activities are concentrated in financial districts.

Finally, the city planner should be aware of these broader patterns of the base and their planning ramifications for the sake of preparing himself against the approach of problems of change. A shift in the dominant character of a community's base from Class A to Class B, though gradual, would suggest the preliminary drafting of rather sweeping changes in policy that would not necessarily be apparent if a more piecemeal approach to the community's economic makeup were employed. Shifts from B to A might be equally revolutionary, depending upon the case under consideration.

An approach such as the one described above should reduce the volume of analysis that would otherwise go into a study of each base activity of the area and lend organizational unity to what could be a diffuse patchwork of urban economic activities. Classification does not, of course, eliminate the necessity of progressive studies of individual base activities which show a changing relationship to their raw materials, markets, productive factors, to other base activities, and the service activities of the economic area. The city planner is, moreover, concerned with the qualitative character of each of his base activities and appreciates the the specific planning needs of maufacturing, commercial, and institutional activities and their individual and combined influence over general community needs.

However, our argument contends that general understanding by the planner of the planning significance of the two principal base classifications is important not only from the standpoint of simplification but also from the point of view that an overall improvement in planning efficiency is to be gained. The system of classification suggested tends to give an uncluttered view of the urban economy which may well bring to the planners' attention core relationships and cumulative effects that he had not previously appreciated in drafting long-term policy. In short, classification can be a means of creating a better adaptation of present plans to present and future urban needs.

This entire problem of ordering and reorganization will take another tack in the next article of the series when the question of base measurement is discussed.

## Author's Addendum

Since writing the article, "Mechanics of the Urban Economic Base: The Problem of Terminology," which appeared in the August issue of *Land Economics* it has occurred to the author that he was a bit abrupt in making his concluding recommendation of the term "service activity" as the appropriate manner in which to refer to the economic complement of the base.

This dissatisfaction was aggravated by the recent appearance of two well executed base studies which seem to highlight the disagreement of the field on proper nomenclature for locally focused urban economic activities.[1] The intensity of the disagreement in this case seems magnified by the fact that both reports are in practical agreement when referring to

[1] Denver Planning Office, *Working Denver* (Denver, Colorado: 1953); and John W. Alexander, *An Economic Base Study of Madison, Wisconsin* (University of Wisconsin Bureau of Business Research & Service, Madison: 1953).

the exporting phase of the urban economies under discussion. One uses the term "base" the other "basic" (employment or activities). In fact the general trend toward the use of the terms "base" or "basic . . . ." leaves little doubt as to their eventual acceptance by all writers in the field.

The study put out by the Denver City Planning Office employs the term "local service activity" to describe the base complement. This is an accurate expression yet the word "local" seems redundant if service activity is originally defined as being local. However, a more substantial question in this connection develops from the fact that if we recommend the term "service activity" we are causing possible confusion with the standard industrial classification term "service." This confusion might be abated by using the industrial classification term in its full form, i.e., personal and professional services. There is, however, in the opinion of this writer small chance of confusion such as the one referred to when the term "service activity" is encountered in its proper context.

From another point of view it seems desirable to steer away from terms descriptive of this economic function which have a slightly derogatory sense as does the word "secondary." Avoidance of vague and negative terms such as "non-basic" found in the Madison study is also advisable.

Finally, it must be kept in mind that the term selected in a case such as this should, in addition to the qualities of simplicity and familiarity, reflect as accurately as possible the function which it is trying to describe. This the expression "service activity" does fairly well, "secondary" and "non-basic" not at all.

# Reports and Comments

## Tourist Packer Services in Primitive Areas

PACKING was once associated primarily with the prospector; today hunting parties and fishermen constitute the main users of pack strings. Over one hundred Idaho packers[1] and some thirteen from Montana grossed over $400,000 during the 1950 season, taking over 1200 parties on pack trips in Idaho.

With the object of learning more about the operation of the packer and aircraft charter services the University of Idaho Research Council sponsored Project 30-A in 1951. This paper covers only the role of packing operations in Idaho.

### *Methodology*

The absence of any prior study of these charter services within the Rocky Mountain area suggested the need of a pilot study.

Questionnaires, interviews and field observations constituted the core approach. Both an explanatory letter and base maps were attached to each questionnaire and each recipient was requested to indicate on the maps his trip destination areas. The map data were compiled, verified and supplemented by reconnaissance. Two field investigations were undertaken in an attempt to contact personally numerous packers for additional data and to rectify or verify preliminary findings.

### *Packer and Guide Industry*

Two areas in Idaho are of major importance in the packing and guide industry, though trips are made to many other portions of the state. The Clearwater River, especially its Selway and Lochsa tributaries, constitutes the major packing area in the northern part of the state, with the Selway-Bitterroot Primitive Area as its nucleus. The other major area includes the main Salmon River, and its tributaries, as well as the headwaters of the Payette and Boise Rivers. Both the Idaho and Sawtooth primitive areas are included in this territory.

From these two general areas, eight well-defined packing districts (Figure 1) were delineated according to the traffic flow pattern. They are not all of equal importance, though there appears to be a decided trip preference for several of the primitive areas.[2] Idaho contains three of the seventy-seven primitive areas within the National Forests that have been established with stringent regulation designed to maintain these areas approximately in their natural state. However, as wildlife, except for migratory waterfowl, is governed by state law, these areas are open to the public for fishing and hunting. Roads and air-strips in the primitive areas are generally prohibited except where facilities antedate the creation of these areas. There are several private parcels of land within Idaho's primitive areas where original ownership was based on homesteading or mining claims. Where homesteading was limited or mining opportunties proved unprofitable, many of these sites were sold or reverted to state or federal agencies. A few remaining ones were favorably located in regard to possible landing strips; and they have been developed into commercial sites to cater to fishermen, hunters and scenery-conscious tourists who reach these sites mainly by private and commercial charter airplanes, as well as by pack trips.

Though packing is concentrated in the eight designated areas, many packers live at

[1] *Packer* includes any person operating from a temporary or permanent base for compensation who may provide saddle or pack animals as well as equipment for hunting, fishing or scenic trips. *Outfitter* refers to the individual or organization renting out the equipment or animals, but not accompanying parties. *Guide* refers to an employee of a packer or outfitter whose responsibility is that of guiding parties, though it may include wrangling, cooking, or even the retrieving and dressing out of game. Another set of definitions are set forth in Senate Bill 145 as enacted by the 31st Session of the Idaho State Legislature.

[2] National forests include a number of classes of areas which are preserved in a wild condition, including Primitive Areas, Wilderness Areas, and Wild Areas. For the purposes of this report, they will be referred to collectively as "primitive areas."

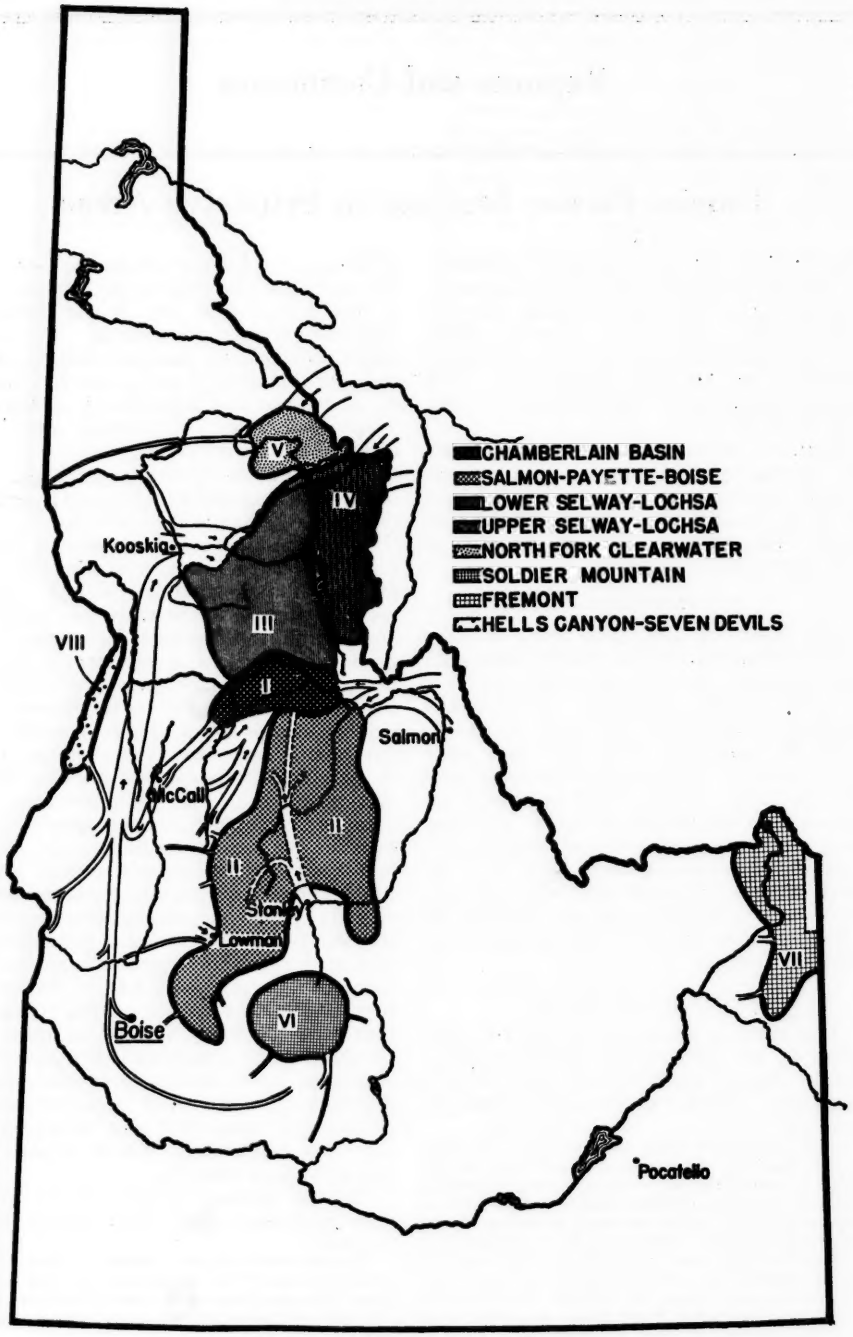


FIGURE 1—Major Idaho Packing Districts.

considerable distances from these areas. During the fishing or hunting season these packers move their stock and equipment close to the sites of initial departure. This category of operation has been termed "migrant" packing to differentiate it from "resident" packing wherein the packer maintains year-around residence close to the site of initial departure on pack trips. The highest incidence of migrant packing noted was in the Selway-Lochsa area. Migrant packers from southern and southwestern Idaho come to this area with their stock and compete with the resident packers.

The type of packing varies with the locale and with the purpose of the trip. Two types are dominant. On the regular trip the tourist is provided with guide services and necessary camping equipment, while food and cooking services may or may not be provided. The tourist is always expected to provide his own gun, fishing gear and sleeping bag. In the other category, called "spot packing," the tourist provides all of his own equipment and food, which is transported for him to his base camp, after which the packer leaves to contact another party thereby leaving the tourist alone. Generally no other services are provided except the packing out of the party and its game at the end of the trip.

At a time when road access was more limited and when relatively few individuals possessed the necessary equipment for an extended period of camping in isolated areas, packers were called upon to provide all the necessary accoutrements for camping. The growing road network lessened the need for reliance on the packer and thereby encouraged the development of the roadside hunter and fisherman. Roadside activities became crowded with the popularity of the automobile and then the roadside sportsmen called upon packers for short trips away from the road. This led to spot packing which has since become a significant factor in the packer and guide industry that will continue to expand where roads penetrate close to desirable areas. Spot packing is now common in the readily accessible western entrances to the Selway-Lochsa region and to a lesser extent on the Montana side of the Bitterroot Mountains. A relatively small incidence of spot packing was indicated in the Chamberlain Basin and Salmon River district, except where roads abutted the packing areas.

Until 1951 there was also a group of semi-commercial packers working only in the hunting season. They consisted of individuals with small strings of animals and limited camping equipment adequate for their own trips. Upon completion of their hunts these individuals would solicit trade from new arrivals at below-market rates for packer services primarily with the purpose of defraying the cost of their own hunts. In most cases these individuals were unable to accommodate hunting parties satisfactorily because of their lack of adequate equipment, packing experience, and general familiarity with the area. The semi-commercial operator, almost always a migrant, functioned as a parasite on the reputation of established packers in the region. In some instances their stock was reported improperly cared for and even occasionally abandoned to eliminate feed and transportation costs. This practice has also been noted among private hunters using their own pack and saddle animals.

The income of the semi-commercial packers has not been ascertained because the individuals involved could not be identified and isolated. They generally remained in the hunting area only for a short period of time and rarely took more than one party on a pack trip.

Commercial packers range from the so-called "shoestring" packer, whose gross packing income rarely exceeded $1,000, to the largest operators whose gross packing income reached $15,000. Virtually all of the larger packing activities were found to be associated with ranches or resort areas close to or within the primitive areas. In most cases packers depend upon various sources of income, with packing constituting merely a secondary source.

### *Commercial Aspects*

Tourist, packer, and state viewpoints merit consideration in a discussion of commercial aspects of the industry. From the viewpoint of most tourists, the packer and guide industry is insignificant, as their contacts are mainly with service groups providing food, lodging, entertainment, and transportation along the highways. It is the exceptional tourist or sportsman who is interested in the more remote areas available only by horseback. The primary reason for the generally small pack trip appeal to tourists stems from ignorance or disinterest concerning the availability and character of this service industry. Some are disinterested because of an exaggerated notion as to the expense involved.

Illustrative of this is an incident recounted concerning a tourist who was informed that the pack rate was $150 per person. In all seriousness he believed that the rate was only applicable to packing into the desired area and then suspiciously inquired further as to the fee charged for packing him out of the area. Ignorance of the rate structure has led unethical packers to charge "what the traffic will bear." On occasion, rates have been changed between the initial correspondence and the beginning of a trip. This was frequently found justifiable when additional services were provided or when parties demanded or brought excessive amounts of equipment, food, or alcoholic beverages.

Most packers refrain from announcing rates in folders or advertisements as their industry is highly competitive and open price competition could be detrimental to a business which relies heavily on personal recommendations.

The price range is based on differences in territory, competition, size of pack strings, and the varying length of pack trips, Where food, camping equipment, and supplies were furnished by the tourist, charges ranged from $75 to $100 per man per trip. Prices paid for services to the packer may include field dressing of game and usually include packing out the game.

Pack trips for fishing parties range from one to three days and are generally priced somewhat lower than hunting trips. In many instances fishing trips are carried out only with saddle horses or parties, "spot packed" to a fishing site and brought out by the packer at the end of the prearranged period.

Spot packing rates range from $50 to $100 per man per trip, and generally include the packing out of game. With few exceptions, distant out-of-state tourists prefer regular packing, while local sportsmen, familiar with the terrain, express a preference for spot packing.

Based on a study of several hundred successful and unsuccessful spot and normal pack trips, it appears that the average cost of an elk and /or deer per hunter ranges from $150 to $200 from the point where the pack trip starts. This figure excludes the initial cost of personal equipment, food, lodging, and transportation prior to and following the trip.

From the packer's viewpoint, there is generally a small margin of profit because of the short season, labor costs, high initial cost of equipment, and high maintenance costs on stock and equipment. In general, packers who maintain their stock in southern Idaho utilize them part of the year in farm or ranching operations and are able to spread their overhead over a longer period of time. The warmer valleys in the southern sections permit them to keep stock on winter range and thereby eliminate high winter feed costs. On the other hand, local resident packers in the northern areas are forced to pay winter feed costs and frequently maintain their stock during the entire year solely for the short tourist season. To offset their high expenditures, sale of stock at the close of the hunting season appears to be increasingly popular as a means of reducing winter overhead. Prior to the next hunting season, new stock is purchased. Despite the financial benefit in this mode of operation, it leads to the down-breeding of the stock quality. Where packing is conducted in conjunction with ranches or lodges, there is still an additional overhead but there is a more favorable distribution of labor costs.

The method of post-season animal disposal consists primarily of the sale of the horses or mules at auctions, known as "barnyard" or "chicken-feed" sales, where the price received for most pack animals is about two or three cents per pound. This seasonal procedure is frequently followed by both small migrant and small resident packers. Many semi-commercial packers and private hunters exploit this opportunity by purchasing stock immediately before the hunting season and disposing of the stock following their trips. In this fashion their total stock expenditure can be expressed in the weight loss by the animal in the time interval. Despite the growing popularity of this practice, there are still numerous packers who keep good stock throughout the year and who endeavor to improve the quality of the stock.

Packers are reluctant to advertise as they feel this to be an unnecessary expense without persistent and immediate financial benefit. In most instances observed, this has been a short-sighted policy retarding expansion. Several attempts have been undertaken for organized advertising programs under the organizational leadership of the larger operators.

Packers, other than ranch operators, catering to intrastate tourists, tend to have a greater number of parties and emphasize spot packing. On the other hand, packers primarily catering to out-of-state parties tend to

charge higher rates and conduct fewer parties per season. In general, packers prefer out-of-state tourists.

Tourists enroute to the primitive areas stay in the state for a minimum of three days. Consequently, one primitive-area-bound tourist is of greater value to the state than three interstate transient tourists. It is the latter group that is, logically, more numerous. Notwithstanding this fact, state agencies have made little effort to encourage tourists to use the primitive areas. State agencies have not been alone in their neglect of this potential resource. Because of the ubiquitous summer fire hazard and limited funds for trail maintenance, the United States Forest Service has not encouraged the expansion of this industry. In some instances, local "sportsmen" groups, fearful of out-of-state competition, have also contributed to the retardation of an effective development program.

On the basis of adjusted reports received from forty-eight packers in 1949 and fifty in 1950, it has been determined that their gross income from packer and guide charter services alone amounted to $181,000 in 1949, and $201,000 in 1950. This represents a per capita gross income of $3780 and $4030 in the years of 1949 and 1950, respectively. When these per capita values are multiplied by the number of known packers operating in 1949 and 1950, one obtains a total value of $390,000 and $420,000, respectively. This figure excludes the income of the ranch operations, but does include the income of packers operating in Idaho from a Montana residence. This represents an average expenditure of between $70 and $75 per person per pack trip. The Montana packers alone accounted for $49,000 of this sum for 1949 and almost $53,000 in 1950.

The packers operating in Idaho conducted a total of 1227 parties averaging 4.6 persons per party in 1949. This averaged about 12 parties per packer per season. Almost the same number of parties were recorded for 1950. Consequently, the 7.7 per cent dollar volume increase for 1950 over 1949 was due partly to increases in rates and a probable increase in the length of stay.

### *Tourist Origins*

From an analysis of data concerning 572 parties taken on packing trips, it was found that 44.2 percent were of Idaho origin, 32 percent from California, 13.3 percent from Washington, Oregon and Utah combined, while the remaining states constituted 20.5 percent of the total.

This indicates that 55.8 percent of the parties have an out-of-state origin. It might further be pointed out that the out-of-state parties expend more per capita than intrastate tourists. This helps explain why most packers prefer non-Idaho packing parties. Tourists from adjacent states pack into areas closest to their home state, while distant out-of-state tourists were scattered throughout Idaho. The lower Salmon River provides a fairly reliable divide between north and south Idaho origins for intrastate tourists. North Idaho tourists generally pack on the Clearwater, Selway and Lochsa drainage systems whereas residents from southern Idaho generally concentrate on the areas south of the Salmon River and along the upper Boise and Payette rivers.

Of the eight major packing districts delineated (Figure 1), the Chamberlain Basin (I) has the greatest packer density in the state. It is an amorphous unit that extends roughly from the South to the Middle Fork of the Salmon River. It is the hub of the Idaho Primitive Area, wherein north and south Idaho tourist patterns intertwine and become blurred.

Second in importance is the Salmon, upper Payette and Boise district (II) which is dominated by the drainage basin of the Middle Fork of the Salmon River. Of secondary importance are the upper reaches of the South Fork of the Payette River and the North Fork of the Boise River. Packing into this district is associated with elk and deer hunts, fishing, boating and scenic trips. The eastern entrances account for 40 percent of the trips that funnel through Salmon, North Fork and Meyers Cove. Part of these trips are destined for the Bighorn Crags. Stanley dominates the southern gateway, while Lowman, with 25 percent of the trips in this area, is the most important western entrance.

The drainage systems of the Clearwater, Selway and Lochsa rivers have been divided into three separate districts based on pack trip routes and cluster patterns. The two southern districts lie partly within the Selway-Bitterroot Primitive area. Of these the lower Selway-Lochsa district (III) is most important. It is served by a substantial number of resident packers, as well as migrant packers from southern and south-

western Idaho. About 70 percent of the pack trips into this district enter via Kooskia.

The upper Selway-Lochsa district (IV) is next in importance and is entered almost exclusively from Ravalli County, Montana, east of the Bitterroot Mountains.

Along the North Fork of the Clearwater River and its tributaries there is another important packing district (V) accessible from both Montana and Idaho. Though some pack trips move into the region from the west, over 80 percent of the trips start in Mineral County, Montana. The Montana packers have the advantage of a shorter pack trip to the desired area.

South of the Sawtooth Primitive Area and the town of Atlanta there is located the Soldier Mountain district (VI). This constitutes a minor, though significant, packing area served by Idaho packers. Of still less significance are two outlying districts on either side of the state. One district (VII) is located mainly in Fremont County; the other covers the Hells Canyon-Seven Devils district (VIII) along the Snake River west of Riggins. Locally there are other small areas where pack trips are taken, but their relative role is too minor to be indicated on the map.

*Problems of the Industry*

Most packers regard their packing activities as a supplementary income and their work, which is highly seasonal in character, at best an uncertain and insecure way of making a living. Most of the packers live in isolated places, which leads them in many instances to maintain attitudes of independence about official agencies. Any regulation which affects them directly or indirectly is therefore likely to be suspected and looked upon as possible interference with the legitimate exercise of their enterprise. They have a proprietary feeling about their hunting or fishing areas stemming from long-standing familiarity with these places; and they seldom appreciate the character of overall regulations intended to improve game management or hunting conditions.

Few innovations have been introduced into the traditional packing business. Trails cleared one year may be littered next year through windfall, new growth, or washouts. With few exceptions, packers today operate like they did thirty or fifty years ago, with essentially the same techniques and materials, and they give way only reluctantly to compromise with modern means of transportation. Noteworthy changes in this industry include increased emphasis on part-time packing rather than full-time packing and the introduction of spot packing, which provides packers with less income from each party but gives them more time and thus a larger number of parties.

The reluctance of the packer to accept change is obvious in his negative attitude toward advertising and other promotional media. With few exceptions the packer depends on the word-of-mouth recommendation as the basis for his continued operation or expansion. This grapevine system has been surprisingly successful over a period of years. This success is attributable, in large part, to the fact that it caters to the individual's sense of "exclusiveness" or the romantic attitude of private contacts around these remote primitive areas.

The State of Idaho has many and varied interests in the operation and development of the packer and guide industry conducted within its boundaries. These services provide the only mode of transportation currently possible in reaching numerous otherwise inaccessible areas. As tourists utilizing packer and guide services generally spend more money on a per capita basis than most categories of Idaho tourists and at the same time leave the resources virtually intact, they should be encouraged within the limits inherent in the principles of wise land use and game management.

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# The Alleged Multiple-Effect of Income Taxation on Public Utility Rates

COST inflation, as is well known, has brought a reversal in the long downward trend of public utility rates and in many instances has required sharp rate increases. Officials of utility companies and embarassed state commissioners have often sought to place the lion's share of the blame for these increases on federal tax policy. It is

the purpose of this paper to establish as fallacious certain of the alleged effects of taxation on public utility rates.

Federal or state excise taxes on the services rendered by utilities will, of course, add to the consumer's burden. Moreover, under the special circumstances of a regulated public utility company where the public authority undertakes to maintain shareholder's income at a predetermined level of "fair return," taxation of the company's income will not be allowed to reduce this "fair return" level but will be passed on directly to consumers in the form of higher rates. It is therefore perfectly correct to argue that rather than reducing the residual income available to shareholders, income taxes generally will directly increase the rate burden of the consumers of utility services. But state commissioners and utility company officials have sometimes gone much further, and have argued that income taxes will increase as a function of and more than proportionately to rises in other costs, i.e., that where labor costs or raw material costs rise, the state commissions are obliged to increase rates not only in order to compensate for wage increases or higher raw material and equipment prices but also there must be an additional increase in rates in order to cover a greater income tax levy which comes about *because* of these increases in operating costs. The federal income tax, it is claimed, requires that a given increase in costs be reflected in a multiple increase in consumer charges.

The following (taken from the 1949 *Annual Report*, Maryland Public Service Commission, pp. 13-15), is moderate in tone and typical in content and illustrates the point:

"In its reports for other years the Commission pointed out the effects on the utility rate situation of the high Federal taxes. The impact of the taxes on the rate-payer is especially severe in a period such as we now are going through. When higher cost of operation makes rate increases necessary, not only must the rate be increased to meet the greater cost of operation—labor, material, fuel, etc.—but the additional Federal taxes on the increased income of the utility must be added, also. For every dollar of additional net income required by the utility, at least one dollar and sixty-one cents must be paid by the user of the service merely to take care of the larger income tax on the additional net income.

". . . . emergency rates [were required] designed to produce $2,450,000 in additional annual net revenue to the [telephone] company. To produce this amount of net it was necessary to increase the rate approximately $4,087,000, the difference between this amount and the lower figure for net income being accounted for by the larger amounts required for Federal Income Tax which took $1,502,000 of the gross amount, Maryland Gross Receipts Tax, which took $81,000 and several other items taking $44,000 in all. This very pointedly illustrates what we have said about the effects of taxes on utility rates. In the case in question the Commission had to increase the charge to subscribers to about $1,600,000 more than was actually required by the Company in order to provide for the payment of higher taxes."

This argument that not only is the corporate income tax itself a burden on consumers but also that this tax multiplies the impact of other cost increases on the rate structure is fallacious. The federal income tax *per se* does not aggravate the impact of inflated costs on the rate structure by requiring a greater than proportionate increase in rates. The tax is levied on net income. If costs should rise and rates be increased so as exactly to counteract that increase in costs, then net income would remain unchanged—and so would the rate of taxation and the absolute amount taken by taxes remain unchanged. The argument which falsely attributes a multiplying effect to federal corporate income taxation is indeed based on experience, but on an experience which is conscious of only half of the process of cost and rate readjustment. If costs rise and net income is therefore reduced below the level of "fair return," then, because net income has been reduced, taxation is reduced also. Taxation in this instance is a cost which moves inversely with changes in the sum of all other costs. In order that net income might be raised again to its former level of "fair return" it is necessary that rates be increased sufficiently to offset the specific additions to cost as well as to compensate for the cancelling out of the tax decline which resulted from the temporary shrinkage of net income. If one considers the case of the utility company demanding higher rates *after* the inflation of its costs has reduced its net income below the level of "fair return," then indeed it would seem that federal taxation multiplies the effects of cost inflation for the problem would then appear to be one of increasing rather than of maintaining net income and the previous decline in taxation brought about by that increase in costs, which is the crux of the problem, would be left out of account. If, however, one considers the

position of the company before the cost increase cut net income below the level of "fair return" then it would be clear that in order to maintain net income in the face of rising costs no increase in rates is needed beyond that required to offset specific additions to cost, i.e., that at both the point before net income was reduced below "fair return" and at the point after the level of "fair return" was reestablished, the magnitude of the federal corporate income tax must be the same.

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# Urban Redevelopment as an Outlet for Capital Investment†

## I.

CAPITAL investment in urban redevelopment looms large in most of the projections of the nation's total capital requirements prepared in recent years. It has a direct bearing on capital formation in residential real estate, for the estimates of potential expenditures for urban redevelopment are based entirely on calculated replacement needs for residential structures considered to be substandard, although renewal of the nation's urban plant should by no means be limited to residential facilities.

The magnitudes involved may be illustrated by one example. Projections of "America's capital requirements" for 1951 to 1960 by the Twentieth Century Fund include $26 billion in 1940 prices for replacement of substandard dwelling units. This amount exceeds by about one-third the investment in residential construction projected to meet "new requirements," that is, those assigned to population increase and provision of a normal vacancy reserve. It is almost as large as the projected outlays for highways and is more than half the projected new investment in mining and manufacturing facilities. It represents fully 10 percent of the nation's estimated aggregate capital requirements.[1] In terms of dwelling units, 6,705,000 units are scheduled in this projection for replacement as against 5,300,000 calculated to meet "new requirements" and normal demolition losses. Obviously, the future volume of residential construction would differ a great deal depending upon whether or not replacement of this or similar magnitude can reasonably be expected.

The purpose of projections of capital requirements is to help in establishing goals for the community-at-large. However, if attention is focussed on the most probable impact of urban redevelopment on capital formation and the demand for capital funds, several questions, usually by-passed in purely numerical projections of housing replacement needs, must be raised. Will the community-at-large adopt urban redevelopment programs in anywhere near the magnitude implied in most of the projections? Will it be willing to pay the price involved in federal and local aids, particularly if the costs of executing redevelopment programs should be larger than envisaged? Is it desirable or feasible to concentrate urban redevelopment, a remedy for the acts of many past generations, within relatively short periods? Can the specific resources employed in such a spectacular undertaking be used in construction after the projected redevelopment program is completed and only "normal" demand and current replacement requirements are to be met? Granted that, numerically, demolition of a dwelling unit creates a "need" for a unit to be built, what are the prospects for marketing replacement units in the contemplated quantities?

Only a few of these questions can be discussed here, but their consideration, it is hoped, may at the same time throw some light on the others. Brief references to the

† This article is derived from a study of *Capital Formation In Residential Real Estate—Trends and Prospects*, by the author and his associates, David M. Blank and Louis Winnick. The study is scheduled for publication by the National Bureau of Economic Research.

[1] Robert W. Hartley, et. al., *America's Capital Requirements —Estimates for 1946-1950* (New York: The Twentieth Century Fund, 1950). Housing data based on Table 31, p. 55; other data based on Table 16, p. 23. The replacement estimate of $26 billion (in 1940 prices) for 1951-1960 includes $18.7 billion for "accumulated deficiencies" and $7.4 billion for "current obsolescence" of dwelling units. It assumes that (a) no nonfarm dwelling unit in 1960 would be more than 60 years old, (b) no nonfarm dwelling unit would need major repairs, and (c) no unit in *urban* areas would lack a private bath and flush toilet. "New requirements" are composed of "normal expected increase in families, additional increase resulting from undoubling, and provision of vacancy allowance of 5 per cent of total supply."

mechanics of urban redevelopment will be necessary for an understanding of more basic issues.

Urban redevelopment programs typically involve land acquisition and removal of structures by local governments and a write-down of the cost of the (cleared) land with local or a combination of federal and local aid. Thus, to take a somewhat simplified example, under the provisions of the Housing Act of 1949, if the cost of land acquisition and clearance is $1 million and the re-use value is $500,000, two-thirds of the write-down may be borne by the federal government and one-third by the city. The emphasis in the Act is on "maximum opportunity for the redevelopment of project areas by private enterprise" although the land may alternatively be used for public housing projects by local authorities.[2] Private developments must, of course, be designed to meet all operating costs and a return on capital. Residential redevelopment by private enterprise is, therefore, contingent upon demand expectations for new housing. Deferring discussion of the use of cleared sites for public housing, two questions then become of crucial importance to the volume of residential construction: the effects of large-scale residential demolitions on the demand for new residential construction generally, and the effects of lower land costs on rent levels in new residential developments on cleared sites, which operate specifically on demand for these developments.

## II.

For purposes of analysis it is illuminating to examine the "demolition" effects and the "write-down" effects separately. The demolition effects can be seen most clearly if it is assumed that the cleared sites previously occupied by residential buildings are used for nonresidential structures or for parks or left vacant. In this case, effects of demolitions on new construction will be indirect and it is most unlikely that they will produce a one-to-one relationship between the number of demolished and the number of newly built dwelling units. The households dislocated by demolition will exercise demand for housing primarily in the existing supply, for few occupants of substandard housing can afford new privately-financed facilities. Some of them will fill vacancies; the proportion of those doing so will depend on the vacancy ratio and the price and rental distribution as well as the location of vacant dwelling units. Others will bid for occupied units. Still others will double up with existing households—particularly the fairly large number of "broken families" characteristic of occupants of slums and blighted areas. With the filling up of vacancies and the bidding for occupied units, rents and prices will rise and forces leading to new construction be set in motion. But substantial upward shifts in rents and prices of existing dwellings would at the same time reduce total demand for housing unless incomes were to rise significantly.

Thus, there would be attritions at many points in the chain of market processes from demolition to new construction. Attritions would be especially great if a large portion of demolished residential buildings had been occupied by Negroes and other minority groups which are severely restricted in their choice of residential location. As a result, demolitions would most probably result in new construction of a much smaller number of dwelling units than the number of demolished units. Using the previously mentioned projection of the Twentieth Century Fund as an illustration, the demolition of 6.7 million units from 1951 through 1960, equal to more than 17 percent of the total number of non-farm units existing at the beginning of the period,[3] might generate new construction of only 4 or 5 million units.

The effects of the write-down of land costs for redevelopment projects can be seen most clearly if it is assumed that the sites to be cleared are wholly occupied by nonresidential structures and are to be improved exclusively with residential developments. Granting that housing demand is responsive to price (but less so than it is to income), the write-down of land costs then becomes the only factor operating on demand. While actual figures will vary from case to case, a 50-percent write-down of land costs will rarely produce a rent reduction by more than 10 percent as compared to rentals for the same kind of housing without benefit of the write-down of

[2] Sections 102(a) and 107, Public Law 171—81st Congress.

[3] According to the Census of Housing, there were 38 million nonfarm dwelling units in April 1950, other than seasonally vacant units. Allowing for net additions during the remainder of 1950, the probable number at the beginning of 1951 would be about 39 million.

land costs through government aid.[4] Rent reduction of this magnitude will tend to widen the market for new construction in only moderate degree, since elasticity of demand to rent is probably low. The write-down of land costs of itself does not produce rentals which would make occupancy of new housing possible for large numbers of households which otherwise would be unable to do so. The tenants for private residential redevelopment projects must come in large part from households that can afford new dwelling units anywhere, in central or outlying areas.[5] To the extent that redevelopment projects attract households which otherwise would have moved into new housing elsewhere, no net additions to the volume of new construction can be expected, although redevelopment may stimulate demand for new housing in central locations at the expense of new construction in outlying areas.[6]

Thus, the "write-down" effects on demand are far more limited than the "demolition" effects and, if they alone were controlling, the scope of redevelopment would be reduced to the volume of new residential construction that could be absorbed by the additional demand generated by lower land costs in residential redevelopment projects. This volume most likely would be wholly out of proportion to the large numbers appearing in projections of capital requirements for urban redevelopment.

III.

With the mechanics of present federal aids for redevelopment, there will in fact be an admixture of "demolition" and "write-down" effects. For the Housing Act of 1949 permits federal aids for the removal of residential slums or blighted areas and preparation of such sites for any redevelopment, residential or nonresidential; and for the removal of nonresidential slums or blighted areas if the sites are to be redeveloped for predominantly residential uses. The admixture of demolition and write-down effects will depend on the relative quantities of residential and nonresidential demolitions and land uses on the cleared sites and, in the case of new residential projects on old residential sites, on densities before and after clearance. If new projects typically accommodate 1,500 families on sites previously occupied by 1,000 families, the write-down effect will control the possible scope of urban redevelopment more narrowly than if 1,000 old units are replaced by only 500 new units.

To the extent that redevelopment sites are used for public housing projects, demand limitations on the scope of urban redevelopment no longer apply. For public housing, through operating subsidies, does make occupancy of new housing possible for households which otherwise would be unable to afford it. If public housing is to be accorded a larger position in redevelopment programs, however, subsidies for an expanded public housing program must be added to subsidies involved in the acquisition of redevelopment areas alone. This factor may again tend to limit the scope of redevelopment programs. Regardless of the place of public housing in the programs, the implications for *private* capital formation and financing in residential construction are clear. Either because of a much larger admixture of public housing projects than is now visualized, or because of the limited demolition and write-down effects on the demand for new private construction, the opportunities for private investment would appear to be much smaller than numerical projections of capital requirements for urban redevelopment suggest.

IV.

These observations of a general and aggregative character have immense practical

[4] As a schematic example, it may be assumed that a redevelopment project without government aid may involve an expenditure of $300,000 for cleared land and $700,000 for improvements including architects' fees and carrying charges during construction. A write-down of land costs by 50 percent would reduce the total investment from $1,000,000 to $850,000 or 15 percent. However, operating expenses of the new project would not be affected by the write-down of land costs. Assuming an "operating ratio" of 40 percent, i.e., an allocation of 40 percent of gross income to operating expenses including taxes and of 60 percent to return on investment, the reduction of gross rents made possible by the write-down would be only three-fifths of 15 percent, or 9 percent.

[5] This point is illustrated by the projected rents in redevelopment projects proposed by New York City's Committee on Slum Clearance Plans under Title I of the (federal) Housing Act of 1949. The average monthly rent per room varies from $27 to $35. At an average of 3½ rooms per apartment the monthly rent per apartment would range from about $95 to $122. A sample of new rental housing projects completed in the New York metropolitan area in various periods from 1949 to 1951 revealed average apartment rentals of $107 to $115. More than four-fifths of the apartments in these projects had 3 to 4½ rooms. (Kathryn R. Murphy, "New Rental Housing Characteristics in Nine Areas," *Monthly Labor Review*, December 1951).

[6] Some net additions to the volume of construction may result from provision of new accommodations in redevelopment projects for minority groups whose choice of outlying residential locations is severely limited even if they are able to afford new housing.

significance for the future of urban redevelopment programs. Already the neglect of elementary demand factors in past and current analysis of urban redevelopment potentials reveals itself in difficulties in the execution of redevelopment projects, in an early phase of the current federal program and at a time when the program is so small that demand limitations for new centrally located facilities are less crucial. In an astonishingly large number of instances redevelopment authorities have trouble finding private sponsors for redevelopment projects—in a boom period in which willingness to invest, borrow, and lend is great, and in spite of substantial federal subsidies.[7]

The lagging interest of private sponsors is apparently due to many factors: novel legal and administrative problems involved in a new program, red tape, high construction costs, doubts about the relative advantages of long-term real estate investments, delays in solving the relocation difficulties of existing tenants on redevelopment sites, and others. But behind much of the hesitancy of potential investors is the awesome question of whether there is sufficient effective demand for new centrally located facilities at unsubsidized rents based on present and prospective building costs, even considering the write-down of land costs afforded in redevelopment schemes. If this question assumes some importance in the present early phase of redevelopment programs, it is bound to become more serious as more sites are designated for redevelopment and the program gathers momentum.

The mechanics of urban redevelopment programs (through lowering land costs) add little to aggregate effective demand for new housing or other real estate facilities, and the possibilities of causing, through redevelopment, drastic changes in locational preferences of land users in favor of inlying areas are probably limited.[8]

None of these observations detracts from the desirability of urban redevelopment as a purposefully directed activity with public aid. But there seems to be need for much more thorough consideration of the means and costs of accomplishing slum clearance and of the consequences entailed in its realization. The usefulness of projections of capital requirements for urban redevelopment is greatly limited if such consideration is lacking. To-date redevelopment programs have been so small that their relationship to demand could perhaps be ignored. If they are projected on a massive scale, however, analysis of their probable actual effects on capital formation and the demand for capital funds becomes imperative.

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[7] "For the 25 projects for which applications for federal grants have been approved, the contemplated subsidies from the federal government alone average almost $80,000 a gross acre (including streets and other public land which, omitted from the calculation, would raise the subsidy per acre of private land acquired by about 50 percent). In two of the New York City sites, the federal outlay runs over $375,000 a gross acre; and in one of them, designated for predominantly residential use, it is almost a million dollars a gross acre." *Construction Markets* (Chamber of Commerce of the United States), May 1953, No. 7, p. 2.

[8] Cf., also Leo Grebler, *Housing Market Behavior in a Declining Area* (New York: Columbia University Press), pp. 152-154, where similar questions are raised on the basis of an area study.

# Book Reviews

*Stabilizing Construction: The Record and Potential.* By Miles L. Colean and Robinson Newcomb. New York, McGraw-Hill Book Co., Inc., 1952, pp. 340, $6.00.

*Stabilizing Construction* is the latest in the series of research studies published for the Committee for Economic Development. In conformity with the high standards established in this series, the book makes an extremely interesting and valuable contribution to our understanding of the role that construction activity can play in reducing economic instability.

The two most important areas of discussion concern the nature of the organization of the construction industry and the techniques and possibilities of reducing major fluctuations in construction activity. Colean and Newcomb convincingly demonstrate that the organizational structure of the construction industry, which has so often been criticized as inefficient and archaic, is in large part a necessary consequence of the nature of the product produced by this industry and the characteristics of the demand for this product. Structures and other construction products are typically immobile, complex, durable and costly. For much of construction activity, demand is dominated by local considerations. The great variety of types of construction and the localization of demand leads to significant variation in the use of specific kinds of local entrepreneurial and labor skills even when aggregate construction activity is fairly stable. But, in addition, in recent decades aggregate construction activity has been subject to major fluctuations. To meet these difficulties, the construction industry developed in its general contracting, subcontracting and materials distribution systems an organizational structure which provides both specialization and the required flexibility of operations.

In analyzing the problems of stabilizing construction the authors first discuss the various instruments that have been suggested for reducing the amplitude of fluctuations in aggregate construction, for example, government actions with regard to general fiscal and monetary policies, public works, and mortgage credit, and private actions with regard to flexible prices, innovations in production techniques and product improvement. In general, the authors place primary reliance on general fiscal and monetary measures designed to produce stability in total economic activity. They argue that direct government action in affecting construction volume must be used only with caution and with a clearer understanding of the problems of the industry than has been the case heretofore. The importance of restraining construction in periods of excess demand is sharply underlined, and rightly so, for restraint of construction booms can contribute to mitigation of the following contractions in construction activity. In the public sphere, the authors would rely on contracyclical public works and mortgage guarantee and insurance programs. In the private sphere, they have hopes that the basic raw materials and utility industries can contribute to a more stable volume of construction. In a most interesting appendix the conditions under which public works programs can make a contribution to stability and the various kinds of programs available to meet alternative situations are given an unusually incisive treatment.

On two analytic questions, the present reviewer wishes to take issue. Colean and Newcomb at several points attempt to minimize the influence of construction on major cycles in aggregate economic activity. They base their argument partly on the fact that construction has accounted for only about a tenth of Gross National Product in the last three decades. But on these grounds one could maintain that fluctuations in total domestic capital formation (construction accounted for roughly one-half of capital formation in the twenties and thirties according to the authors) are not important casual factors in business cycles. This view of course overlooks the multiplier effect of changes in the volume of capital formation, an effect which the authors themselves spell out at great length in Appendix B.

The minimization of the role of construction as a cause of major economic fluctuations is also based in part on the fact that other elements of capital formation also fluctuate widely. A comparison is made between total new construction activity and the output of producers' durable equipment over the period 1919-1950 and the conclusion is drawn that construction fluctuated only slightly more than producers' durable output. But the comparison is based on total construction (public as well as private) and private producer durable output. Public construction was much more stable than private construction over the years in question and, for certain periods, actually moved contracyclically. A comparison of private new construction with private producer durable output would show much more violent swings in construction.

The second analytic question about which the reviewer has some doubts is the widely-publicized conclusion of the authors that there is no evidence for the existence of long cycles in total construction, except for war and postwar periods. While there is no opportunity here to discuss this view in detail, the authors base their conclusion largely on the apparent absence of long swings in total construction between a trough in the late 1870's and the peak in the mid-twenties. The estimates of construction are derived by the authors by an adjustment of Long's index of building permit valuations, linked in 1915 to the official government series on total construction activity. In essence, Colean and Newcomb conclude that total construction is not characterized by long cycles, except for war and postwar periods, because of differences in the timing of cycles in the various segments of construction and because of random movements in certain segments of construction.

The reviewer's doubts with regard to this conclusion are based on the view, first, that the authors overly reduced the weight of residential construction in their adjustment of Long's index; second, that other evidence which the authors did not consider (viz., estimates of construction activity derived from the flow of construction materials) indicates that construction is subject to long cyclical fluctuations; and third, that even the authors' revised series on construction activity gives convincing support for the existence of two and a half long swings in the rate of growth of construction between the seventies and mid-twenties.

Within the limited space available to it, this review has been able to only suggest the wealth of information on the construction industry and the many valuable insights into its operation contained in *Stabilizing Construction.* In addition to those subjects mentioned above, the discussion of the causes and methods of restrictive practices of management and labor, of the relative importance of the various methods of initiating construction, and of the changes in productivity of the construction industry (the authors' analyses on pp. 71-74 lead to the conclusion that there have been no increases in productivity in building construction since 1913) are well worth the reader's attention.

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*Apartment Building Construction Manhattan 1901-1953.* By Gordon D. MacDonald, New York: The Real Estate Board of New York, Inc. 1953. pp. 20. $5 (to members of the National Association of Real Estate Boards $1).

The borough of Manhattan in New York City has become an area of cliff dwellers; approximately 2 million people are living, for the most part, in the borough's more than 636,000 apartments. How these people are housed—what changes have taken place over the past fifty years—what trends are evident which are likely to influence future housing conditions in Manhattan are questions which are answered in this study. This represents the second in a projected series of monographs on Manhattan and the New York City area; the first monograph, *Office Building Construction Manhattan 1901-1953,* published in 1952, has been brought up to date by a 1953 supplement which projects office building construction to 1955.

What has happened in Manhattan—the way its people are housed—has been influenced to no small extent by changing basic national and local policies in housing which have run the gamut from laissez-faire to government regulation and control. Although these policies are not presented as such in this monograph, the quantitative data seem to

lend themselves to interpretation according to the following categories:

Prior to 1901 a policy of laissez-faire existed with regard to housing. In New York City and Manhattan this was the era of extensive building of tenement houses, speculative construction to house the low-income immigrant families.

From 1901-1930 construction of housing for the middle and high income groups was prevalent in the New York City area. Also in New York City, the Tenement House Act of 1901 set standards for dwellings housing three or more families.

From 1930 to the present, the federal government has functioned as banker, builder, subsidizer and insurer. In New York City and Manhattan, this is the era of subsidized housing for both low and middle-income groups and of high-rental private housing constructed for those who can afford to pay.

*Laissez-Faire Prior to 1901.* Perhaps nowhere in the United States are the results of unregulated housing construction more in evidence than in Manhattan. Today the population of Manhattan is nearly 1,900,000 persons, most of whom live in apartments. There are 636,131 dwelling units in 34,710 apartment buildings with an assessed valuation of approximately 2.7 billion dollars.

Four-fifths of the apartment buildings are fifty years old or more. More than three-fifths of the 34,710 apartment buildings are classed as Old Law Tenements (housing, considered sub-standard today, built before the New York Tenement House Law of 1901). Today Manhattan has about one-seventh of New York City's population but just under half of the Old Law Tenements for the city as a whole; these Old Law Tenements house 42 percent of the families of Manhattan.

In commenting on the above data from Dr. MacDonald's report, it should be pointed out that these data present in capsule form the housing problem of Manhattan. With four-fifths of the apartment buildings fifty years old or more obsolescence is no mere hypothetical factor.

*The Period 1901-1930.* Only about one-fifth of the 34,710 apartment buildings in Manhattan today, a total of 7,796 structures, of these, 7,049 buildings (90.4 percent) were in existence by 1930. This means then that in the past twenty-three years only 647 structures to house Manhattan's dwellers have been built. Almost all the new construction in the twentieth century has and still continues to be largely for Manhattan's upper-and middle-income families.

*From 1930 to the Present.* Since 1930 a major depression and a world war have had an effect on curtailing new construction both for Manhattan and New York City as a whole, in line with comparable trends prevailing throughout the United States. Dr. MacDonald points out that, when the depression came at the end of 1929, construction of apartment buildings declined sharply. During the war years, 1943-1946, no apartment buildings were constructed in Manhattan. Construction was revived in 1947, but shortages of materials, scarcity of skilled labor and government regulations restricted the housing program.

From 1930 to the present, government enterprise and government aid have been evidenced in a number of ways. For example, new construction for the low-income group has been limited to public housing, the year 1936 being the inception of the program in New York City. Since that date, seventeen contemplated projects including 167 buildings, house 17,774 families in Manhattan. Thus more than one-fourth of the accommodations for families built since 1930 are in the subsidized low-rental bracket.

Eight new structures in Manhattan, in 1951 and 1952, were financed through the Federal Housing Administration Section "608" mortgages amounting to a total of $8,597,000. Almost half of the mortgages for new construction since World War II have been held by saving banks, the remainder by insurance companies and private individuals with only two instances of retirement funds.

In Manhattan, apartment housing construction since World War II totals only 104 buildings with accommodations for 10,003 families. The new apartments are for the most part three or four rooms in size and range from $25 to $110 per room depending on location (the lowest rentals for new construction appear in the Washington Heights district and the higher rentals are on the East Side). In the luxury apartments special features are available such as balconies, reception rooms, dining halls, doormen, maid service and even in a few apartments, electric dishwashers, air conditioning system and open fireplaces. More than half of the new luxury apartments are located on the East Side, some of these are co-operative buildings.

A little known fact is that in Manhattan from the years 1902-1905 inclusive less than 8,000 buildings were constructed; during the same period, more than 16,000 were demolished. Nevertheless, there was a total increase in dwelling units of approximately 152,000 units. This indicates the twentieth century trend toward an increased number of families housed per building.

It is somewhat appalling to note that in the decade 1931-1940 new construction did not keep pace with demolition; this was also true of the two postwar years 1946 and 1950.

Despite this trend, however, the rate of demolition for Old Law Tenements has been low, almost one percent a year from 1910-1952 both in Manhattan and New York City as a whole.

Assuming that demolition will continue at the same rate, it will take about another sixty years to rid the city of its Old Law Tenements alone, not including the other obsolete housing structures. Since at best the life of a building used for residential purposes is generally conceded to be fifty or sixty years in the United States, it is quite evident how far behind both Manhattan and New York City are in terms of coping with the housing problem.

Vacancy rates in competitive apartment buildings in Manhattan have undergone remarkable changes since the year 1943. As late as 1941, just prior to the inception of World War II, the vacancy rate was as high as 10.4 percent; in the years 1945-1948 inclusive it dropped to less than 1 /10 percent; by 1952 the rate has risen to 5 /10 percent, a figure which included vacancies in the 72 postwar high rental apartment buildings.

It should be emphasized that this report is almost entirely quantitative, although the data lend themselves to qualitative interpretation. Although it puts the spotlight on Manhattan, its scope includes also New York City as a whole. (Detailed data for both Manhattan and the rest of New York City are included in the Appendix).

A primary contribution of the report is the fact that it brings together and integrates data from a wide variety of sources; this is evidenced in the fact that data have been gathered from the following agencies in the city of New York: The Hall of Records, The Tax Department, the Department of Housing and Buildings and the Housing Authority. In addition, data were compiled from the Census and from the day-to-day records of the Real Estate Board of New York.

Although housing conditions in Manhattan and in the New York City area in general are in many ways unique, resulting from the demands of large populations concentrated in a small space, nevertheless the supply of housing to meet these demands has been influenced by general policies applicable to the United States. In this sense, data on housing for Manhattan and New York City as a whole, which at first glance might appear to be purely local in their significance, actually have broader implications. Specifically, in harmony with the current objectives of the federal government to the city officials, coping with the problem of evolving a long-term housing program for a specific urban community, this might well serve as a pilot study; to the editor of the real estate section of the Metropolitan press, to the real estate operator, to the financier of apartment construction, to the building owner and even to the often overlooked occupant of multi-family housing residing in any of America's urban communities, the findings are of primary significance.

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*Where Two Great Waterways Meet.* The First Biennial Report of the Chicago Regional Port District Board. Chicago: Chicago Regional Port District, 160 North La Salle Street, 1953. pp. 97.

This report, product of two years of intense study, principally by Harold M. Mayer, a geographer of the University of Chicago and M. W. Oettershagen, an engineer of the City of Chicago, provides the first comprehensive, professional, and especially non-political appraisal of the development, prospects, and problems of the five ports and connecting waterways of the Chicago Region. This report, perhaps better named "where two great waterways almost meet," re-emphasizes the sad facts concerning the 16.2 miles of the Calumet-Sag Canal with its pathetically inadequate 60-foot width (50 feet at the Blue Island Lock) and 32 low bridges, and the bridge encumbered 6.25 miles of the South Branch of the Chicago River which prevents

the effective junction at Chicago of the Great Lakes,St. Lawrence and the Mississippi inland waterway systems; bottle-necks which could be removed by widening the Calumet-Sag Canal and raising its bridges at a cost of no more than 100 million dollars, of which only 10 percent would require local financing. But connecting the Great Lakes-St. Lawrence and Mississippi systems by improving the Calumet-Sag Canal is only one of the questions dealt with in this report; which also indicates that in 1951 the ports of the Chicago Region handled 61 million short tons of commerce and that, during 1952, some 120 ships, apart from the heavy inland commerce in iron ore, coal, and limestone, engaged in carrying valuable international cargoes through the St. Lawrence Seaway. It also provides a detailed survey with plans and recommendations for the development of Lake Calumet Harbor, Calumet Harbor on the shore of Lake Michigan and harbor installations along the connecting Calumet River, as well as a survey of the other commercial developments of the Lake Michigan shore from the mouth of the Chicago River south-eastward to the site planned for Burns Harbor, eight miles east of Gary.

The major conclusion to be drawn here is the necessity for a single authority that can plan and execute an orderly development for the harbors of the Chicago Region instead of continuing the wasteful piece-meal development which has thus far cost the equivalent of 350 million dollars in uncoordinated action by private, municipal fringe, county, city, state, and federal agencies; waste epitomized by such incongruities as the University of Illinois branch and kindred activities occupying Chicago's modern Navy Pier; the six-lane state highway alongside and blocking the western shore approaches of Lake Calumet; the city garbage dump filling in the northern end of Lake Calumet in the face of its great potentialities for industrial development; and the threat of the apparently unnecessary planned development of Burns Harbor. It is to be hoped that this report will serve to awaken needed local and state action to enlarge the jurisdiction and expand the authority of the present Chicago Regional Port District Board to include not only all of the harbors and inter-connected waterways in Cook, DuPage and Will Counties, but also adjacent Indiana Harbor, Indiana. What is needed is an inter-state authority, by whatever name; one that is essentially free from politics and that has adequate funds (certainly more than the current $40,000 budget of the Board!), to carry on official port planning, development, administration, and operation of the public harbors and port terminals of the Chicago Region. Not only is such an authority urgently needed to meet current problems, but to plan for the major development which undoubtedly will materialize with the deepening of the St. Lawrence Seaway. Herein, likewise, there are many valuable lessons applicable to the problems of the other port cities of the Great Lakes.

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*Agrarpolitik.* By Wilhelm Abel. Goettingen: Vandenhoeck und Ruprecht. 1951. pp. 419.

This is a remarkable book. It is written in a lively style and with an unobtrusive brilliance rarely found in agricultural economics literature in Germany or elsewhere. It has a broad historical sweep, yet maintains a well-defined structure in its analytical inquiry. The author combines the methods of history, political science and economics with considerable success in tracing the development in the various fields of agricultural policy from the Middle Ages to the present. He attempts to explain the changes in the institutional and legislative conditions of German agriculture as resultants of ideological currents of thought reflected in the shifting of political power, and of economic and technological developments impinging upon the production processes and living conditions in agriculture.

The tone of the treatise is set in the Introduction, especially in ten excellent pages (pp. 32-41) headed "Agricultural Policy in Science and Art" (of statesmanship). The author criticizes the infatuation of classical economists with highly generalized equilibrium systems in which land is treated as an undifferentiated class of "capital," and which abstract from crucial institutions, sets of value judgments and power conflicts. Thus classical economic theory erased the peculiarities of agricultural production processes, tenure and capital arrangements and, therefore, had but

little to contribute to the solution of policy problems. Consequently, agricultural policy as a field of economic inquiry waned from its peak during the physiocratic era until it emerged again toward the end of the last century.

Agricultural policy is divided into two fields of inquiry: (1) as a descriptive "empirical science," it deals with production economics, institutions and sociological relationships as affected by legislative or other group action; and (2) as a "normative science" and an art, drawing upon the method and materials of political science and the art of statesmanship.

Despite Max Weber's warning against letting one's objectivity become warped by value judgments, Professor Abel maintains that "science cannot be separated from scientists, nor scientists from value judgments . . . . Should Ricardo have kept silent on grain tariffs, Rodbertus on agricultural credit problems, Max Sehring on farm inheritance laws? Every social science forges ahead toward a judgment on social values. It fulfills itself in such a judgment. Hence, agricultural policy, too, is a normative science." (p. 37).

But Professor Abel has a warning of his own to give to agricultural political scientists: don't spend your effort and risk your prestige on issues of minor administrative details; here, merely describe, explain, show the consequences of alternative measures. On major issues, however, involving the welfare of people in agriculture and the nation, speak up, advise, and fight for what you, as a scientist and as a citizen, have come to consider good and just in the interest of the community (p. 38).

Agricultural policy as a science should not be content merely to describe what is and why it is so (descriptive-analytical aspects), but should go further by clarifying and formulating what ought to be (normative aspects) and how problems can be solved and goals achieved (remedial, policy forming aspects). I suggest that, despite protestations to the contrary on the part of some economists in this country and elsewhere, they invariably have branched into the normative aspects whenever they dealt with policy problems. It is refreshing to hear Professor Abel argue the propriety of this endeavor instead of blushingly apologizing for or even denying it.

The main part of the book is organized into seven chapters: 1. "People on the Land," which deals with farm-city migration, the growing social cost burdening farmers in a rapidly industrializing economy, rural education and extension service facilities, farm organizations, cooperatives, and public administration. Chapter 2 analyzes the many types of *farm labor conditions* and institutions governing the social status and economic reward of agricultural workers. Chapter 3 surveys *land ownership* forms from earliest history to the present, farm inheritance, land ownership and land market problems, tenancy, agrarian reforms and land redistribution, and the many economic issues involved in distribution of farms by size groups, from tiny part-time farms to large estates. The fourth chapter deals with *land use and reclamation* and the various public policies that have been developed to increase output, conserve the soil, and consolidate widely dispersed parcels of land. Next, *capital and credit in agriculture* are analyzed as to their adequacy, their role in facilitating technological progress, and the relative effectiveness with which various credit institutions meet the capital needs of farmers. Chapter 6 deals with *agricultural production*, presenting a brief outline of farm management and type-of-farming principles and concluding with a brief section on disease, insect and weed control, subsidies for adoption of new seeds or techniques, tax adjustments designed to encourage production incentives, and various other less direct measures affecting agricultural output.

The last chapter is devoted to the *marketing* of farm products. Most of this part deals with a description of the organization of various markets and with supply, demand and prices of farm products. Only the last thirty pages, out of four hundred pages on agricultural policy, deal with price policy. Yet, despite the extreme condensation of so complex a subject matter, this section on price policy is treated systematically, competently, with a keen sense of balance and undogmatic judgment tempered by an understanding of the socio-economic needs and aspirations of the various groups concerned. Compared with the voluminous professional literature on farm price policy in the United States, Professor Abel's thirty pages on the subject stand out as an impressive and commendable example of how such issues can and should be treated.

Agricultural economists in this country would benefit greatly from a close reading of

this book. I wish that at least its most salient parts could be made available to them in translation.

The expectations raised in the introduction, however, are not quite met. I have the feeling that the author did not want to risk his prestige as a social scientist, perhaps because he chose to deal with what he might consider administrative details rather than with deep fundamental issues, at least when he treated contemporary policy problems. The descriptive-analytical aspects of his subject matter are much more fully developed than the normative and remedial ones. It is also regrettable that he fails to deal with one of the most challenging agricultural policy issues confronting Germany and other European countries, that of European integration of agriculture, industry and commerce across national boundaries. It is here that agricultural policy as a science and an art of statesmanship, and Professor Abel as an outstanding exponent, could make momentous contributions to the building of a progressive economy and a peaceful world.

RAINER SCHICKELE

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*The Modern City: An Introduction to Urban Sociology.* By Svend Riemer. Prentice-Hall, 1952. xi, 456 pp.

Professor Riemer's volume should prove to be a valuable addition to the growing list of urban sociology texts. Although the basic conceptual scheme is that of sociology, the analysis includes generous excursions into such related disciplines as social psychology and social planning.

The text is organized as follows: after a brief introductory chapter on urban history, are six main divisions—Urban Growth, Urban Environment, Urban Personality, Urban Leisure, Urban Social Organization, and Urban Planning.

Riemer takes a positive view of the city, not treating it as the center of all evil in modern society, a common fault in urban sociology material.

His discussion of urban leisure patterns, called "Crafts, Sports, and Gambling," comes closer to being a real sociology of leisure than one usually finds in such volumes.

Probably the best part of the volume is the discussion of social planning. This material is close to Riemer's heart and he has many insights to contribute here to both the students and the professors of social planning. Riemer believes that the social planner must himself play a vital role in the formulation of the ends of social planning. He also thinks that social planning should be incorporated into the main body of social science theory as a basic principle of social organization.

On the negative side, chapter I plunges the student into the history of cities and fails to provide a frame of reference from which the rest of the volume may be viewed. One also has the impression that the historical section lacks richness in documentation.

But all in all, *The Modern City* is a sound piece of work and should prove very satisfactory for courses in urban sociology and /or social planning.

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*Our World From the Air: an International Survey of Man and His Environment.* By E. A. Gutkind. Garden City, N. Y.: Doubleday & Co., 1953. 400 pictures with captions. $7.50.

The conception of this book is pregnant and exciting. Dr. Gutkind, architect-planner, sociologist, human geographer, wears rather consciously the mantle of Le Play and Geddes. The book is sponsored by the British Institute of Sociology founded by Branford, directed by Farquharson. Mumford, who served an apprenticeship there, provides the introduction. Dr. Gutkind might be said to have taken the scheme of Geddes' Outlook Tower in Edinburgh—to survey man and his environment— and with a brilliant inspiration to have added the third dimension not available to Geddes—the air-view. Stimulating possibilities are opened up.

Dr. Gutkind's framework for his 400 air-photos is sociological (in the British sense): 28 plates show "nature untouched" and the environment transformed by natural forces of flood, erosion, etc. Man's modification of the environment is organized under three main heads: "Fear and Security," "Confidence and Adjustment," "Aggressiveness and Disintegration"—leading to final vistas of con-

tour-ploughed fields and T.V.A. dams as "Responsibility and Unification."

This looks at first as though Geddes' "seminal" thinking, as Mumford calls it, might be coming to full flower, but unhappily, I must report that it has run to seed in pretentiousness. Stinging captions denounce the disregard of human welfare in the relation of industry and living space: Butte, Montana, and a Mexican smelter are proper targets. But how is this thesis illustrated by a clean textile mill beside a Danish stream "in a beautiful, hilly landscape" or acres of greenhouses on the "edge of the Forest of Soignies" in Brabant where the "famous grapes of Hoeylaert are matured?" (plate 275)

Dr. Gutkind has bitter things to say about New Orleans under such headings as "Man Deludes Himself into the Belief that He Can Play the Part of an Omnipotent Re-maker of his Environment," in the Part on "Aggressiveness and Disintegration." But his air photo, taken from 15,000 feet or more, portrays merely a city in the sweep of a river such as men have built on the Nile or the Ganges for millenia. Charming photos of fortified hilltop towns have a way of reappearing as illustrations either of "Fortified Villages," "Strategic Strong Points" or "Hilltop Settlements." Under "Protection by Retirement and Solitude" we see Egyptian Pyramids; under "Temples and Monasteries," Chichen-Itza and a Buddhist Mountain Temple. Why then is Mont St. Michel grouped with St. Peter's Square in Rome or the Île de la Cité in Paris as "Temples and Churches as Focal Points?"

Not all the pictures are technically first-rate. The spirit of Amsterdam and Washington, D. C. are not well rendered by the shots selected. A high-level vertical picture of Isfahan gives no basis for appraising the "silhouette" of the "skyline"; both the floating gardens of Xochimilco and the ruins of the baths of Caracalla would be better protrayed by ground photos.

Having said that Dr. Gutkind's pictures do not always illustrate his dogmas, I commend this book to any one interested in man and his environment—rural or urban—for enjoyment as a striking and stimulating collection of pictures, ranging over all the continents and over all of man's history. The unrivalled revelation of prehistoric sites that air photos give is brought into frequent play. Every reader of this journal will find material in this collection that dramatizes some of his concerns. (P.S. Death Valley, U.S.A., is not 5,789 feet below sea-level, as stated under Plate 14).

CHARLES S. ASCHER

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*Planned Industrial Districts: Their Organization and Development.* Washington, D. C., Urban Land Institute Technical Bulletin No. 19. 1952. pp. 54. $5.00.

In view of the widespread interest in planned industrial districts a publication of this nature is indeed timely. It is additional evidence that the study of industrial land use is being more and more recognized as a major field of research as significant in an urban planning program as studies of residential land use. The time when industry would locate in any environment has passed. The industrial executive of today wants an efficient layout and attractive surroundings for his handsome new factory building. Because of this demand, planned industrial districts are being developed with all the care that goes into the building of a residential neighborhood. The community as well as the industry benefits from this kind of development.

This study is divided into two parts. The first part defines a Planned Industrial District and outlines its principal features. It emphasizes the significant role of the developer and describes the many factors—location and size of tract, street pattern, building design, landscaping, railroad service, controls, financing—and other considerations that are so very important in promoting a successful district. The second part is mostly a discussion of ten Planned Industrial Districts that have been highly successful from a financial and community improvement standpoint although differing from one another in various ways. These districts more or less illustrate the features outlined in part one. Six smaller districts that are of special interest also are reviewed briefly. Other districts are mentioned, but not described; however, the study does not list all planned developments in the United States.

This bulletin is the most complete study of planned industrial districts thus far published. Anyone interested in community development will find it profitable reading. The

Chamber of Commerce official and the Industrial Development agent, for example, will find it much easier to promote industrial expansion when they can "sell" the advantages of a planned industrial district. On the other hand the city planner will discover that it fits nicely into his scheme of things. Certainly many communities would like to have a planned industrial tract. Unfortunately, the Urban Land Institute does not discuss the possibilities of promoting planned districts, nor does it consider the relationship of these districts to size of community. Perhaps this phase of the subject will be developed in another study.

ROBERT L. WRIGLEY, JR.
*Washington, D. C.*

*Land Utilization in Australia, Second Edition.* By S. M. Wadham and G. L. Wood. Melbourne University Press, 1950. pp. xx, 376. (Available in U.S.A. through Cambridge University Press, 51 Madison Ave., New York 10, New York.)

This is an extensively revised edition of an earlier work (1939) of the same title and by the same authors. The authors, Wadham and Wood, are Professor of Agriculture and Professor of Commerce, respectively, at the University of Melbourne. They bring to the task a rare blend of knowledge of the techniques and technologies of agriculture and of the economic, political, and social forces that have shaped Australian agriculture within the over-riding controls of the natural environment.

The work is divided into seventeen chapters. It opens with an excellent introductory chapter followed by two general chapters, one sketching the history of settlement in Australia and the other describing the natural factors that control the use of land in Australia. Chapter XIII is a discussion of irrigation development in Australia and the final three chapters are again general considering the effects of World War II on Australian farming industries, the effects of world economic trends upon land use in Australia between 1920 and 1947, and a general appraisal of land utilization and settlement in Australia. Chapters IV through XII and Chapter XIV are concerned with specific agricultural industries in Australia. They include three chapters devoted to a discussion and analysis of the wool industry followed by chapters on wheat, dairying, meat, sugar, fruit, miscellaneous crops and forestry.

The book is a pleasure to read. It is simply and clearly written yet without sacrificing accuracy of statement or analysis. The authors apologize for the breadth of their generalizations and for the omission of many details. Yet a single volume on land utilization in Australia must be so and is revealing by virtue of its very breadth.

Adding materially to the readability of the work are the excellent and profuse diagrams and photographic plates by which it is illustrated.

The outstanding characteristic of the book is the workmanlike manner in which the physical factors of the environment, the economic forces, the social and psychological influences that determine the dynamics of land utilization in the country have been blended in the analysis: "The utilization of the land in any country at a given moment is a highly complex effect of many causes, and the relative significance of each of those causes can be stated only very broadly. Climate, soil fertility, population pressure, the availability of capital at that particular time, the equipment of the farmer or pastoralist as regards both his implements and his knowledge, and the scope and character of markets for the products of the land are all factors of first importance. But behind this first line of causes there is a long array of secondary factors that cannot be disregarded. The system of land tenure as an aid or a hindrance to differentiation in use, the accessibility of the hinterland from the seaboard, the political attitude of the community towards rural industries, the stage of development reached by secondary industry within the country, and the extent to which capital for land development has been available in the past, are scarcely less significant in their total effect upon the composite pattern of settlement and production."

The analyses and descriptions are dynamic, not static. They portray "the processes of becoming." "In the early stages of development in any new country, industries to which the land is particularly suited expand, and a system of occupancy which is wasteful as regards area springs up . . . . After a more or less stable form of settlement has been achieved, the utilization of the land may still be extensive rather than intensive . . . . As

time passes, other forms of production become practicable and economic in some districts . . . . Such a transition may, however, be delayed a longer or shorter period if the land is held by conservatively minded devotees of the earlier method of utilization. Economic forces in the long run usually bring about the change . . . . To some extent there must always be a time lag before occupied land is used to its greatest advantage. The very nature of farming operations, the amount of capital required to change from one form of production to another, and the conservatism of those actually engaged insure that changes in agricultural methods must be slow."

The book should be important reading for students of the economics of agriculture and agricultural resource use in a semi-arid environment of colonial background. It should be especially important reading for students of agricultural development in the western United States where many problems are similar to those found in Australia but where they are frequently clouded and confused because of the close economic and political ties that "the west" has with the rest of the continental United States. Australia exhibits these problems and processes in sharp relief. The causative forces associated with "export" and "import" from and to other areas, the importance of the inflow of capital and people, the processes by which people reared in one set of environmental conditions adapt themselves to a totally different environment, the "boom" and "bust" characteristic of new settlement in a colonial area, all of which operate in the western United States but which are frequently seen only fuzzily, operate in bold relief in Australia and are excellently treated in this work by Wadham and Wood.

M. M. Kelso

*Montana State College*

*The Land System in Palestine.* By A. Granott. London: Eyre and Spottiswoode. 1952. pp. XI. 359. 21s.

The book under review deals with a period which came to an end with the establishment of the State of Israel. In his foreword, therefore, the author claims completeness. There is other ground also for his claim, because of the enormous wealth of material gathered from all the different sources, ranging from travellers' memoirs of the past century to the (scarce) statistics of the Mandatory Government and the (more detailed) data of Jewish institutions.

It is no easy task to describe in one book the land system of two economies so different as the Arab and the Jewish. Where he deals with them separately the author succeeds most. Jewish land ownership is surveyed relatively briefly in chapter XI and paragraph 4 of the last chapter ("Leasehold in Jewish Farming") which explains the principles of the Jewish National Fund—the owner of most Jewish lands (the author is the Chairman of its Board of Directors.) The purely Arab side is dealt with in the instructive historical introduction (in which the basic difference between Moslem and European feudalism should have been stressed more clearly) and in the very good expose on the different classes of landed property, according to Turkish law, included in the chapter on "Landed Property of the State." To one of these classes, Waqf, a further separate chapter is devoted, in which the author is most successful in the description of its administration. The Musha system (communal tenure) and its negative economic influence is analysed in another chapter with many interesting examples and descriptions.

The main subject of the book is the relation between large and small land ownership (chapters II, III, IV, VIII and X). The author shows the two opposing trends which existed in Palestine: on the one hand concentration of big landed property in the hands of few owners, on the other hand breaking up of large estates into small and medium property. "In Palestine no one form of ownership ever had a decisive and unchallenged predominance" (p. 249). The causes of the first process are well stated in chapter III: insecurity inducing the fellaheen to seek protection of the powerful, the waqf system, indebtedness of the peasants, etc. The opposite process was caused by growing security enabling small fellaheen to settle near the towns, penetration of Europeans and sale of big estates to Jews. Yet the author's statement that by Jewish land acquisition large and medium-sized properties were converted into small holdings (pp. 275, 278) seems to the reviewer somewhat misleading since big Arab properties were leased and tilled in small farms and most Jewish small holdings are not small properties. Moreover,

to speak of "disappearance of large land ownership" (p. 302) is an exaggeration.

The agrarian policy of the Mandatory Government is criticized for maintaining fragmentation, desisting from partitioning musha lands and not protecting tenants effectively.

Comparisons with neighboring countries are somewhat casual and not always accurate: there are no more "feudal lords in the full sense of the term" in Syria (p. 47), and the geographical distribution of large and small property in Syria is twice mis-stated (pp. 48 and 191).

The reviewer suggests a glossary to a new edition, to correct the numerous spelling mistakes of Arabic names and terms and to unify their translation.

GABRIEL BAER

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*Industrial Traffic Management.* By Thurman W. Van Metre. New York: McGraw-Hill Book Company, Inc., 1953. pp. xii, 552. $6.50.

Professor Van Metre has made an excellent contribution to the literature in the field of industrial traffic management. This readable well-organized text incorporates information on new materials of a basic nature. Most important among these is the material on the New Uniform Classification, now finally adopted by railroads after nearly fifty years of fairly serious attempts at developing such a classification.

The field of industrial traffic management is receiving a recognition never before accorded to it. Widespread national advertising is emphasizing industrial traffic managers and their importance to their employing concerns. The current series of advertisements of the Wabash Railroad and of the Chesapeake and Ohio Railway are good examples. The excellent work of the American Society of Traffic and Transportation, which is gradually developing a professional attitude among traffic executives, is a further example. So it is good to note the appearance of a book such as this which reflects the widespread interest in the field.

As the author frankly admits, there is considerable disagreement about the choice of material to go into a book of this type. Dr. Van Metre has included much that is fringe material, such as the chapter on marine insurance, the chapters on regulation, and considerable of the materials on rates. This material, like the remainder of the book, is well written, but is more properly included in courses or books other than those on industrial traffic management. More emphasis on the details of industrial traffic department organization and management would better fit the college text needs.

On the other hand, the volume can be highly recommended both for the man in the field seeking to broaden his knowledge of the historical and regulatory background of transportation, and for the wealth of technical features of traffic management which the author has provided. To help the student, the author has included also a list of study materials, a biographical note, and a section of questions and topics tied in with the subject matter of the several chapters. Also included are the texts of the Interstate Commerce Act and the Civil Aeronautics Act.

LESLIE A. BRYAN

*Director, Institute of Aviation, University of Illinois*

*A Prospect of Cities: Being Studies Toward a History of Town Planning.* By Cecil Stewart. New York: Longmans, Green and Co., 1953. pp. 186. $4.50.

*A Prospect of Cities* is a pleasant book, typically English in concealing learning with casualness. The lay reader—for whom it is intended—will pick up a good many odd facts, apposite quotations, and a smattering of information about small towns and their appearance, but he will learn nothing about planning. There is little about land use, nothing about economics, and nothing about the forces that are battering us today nor about the problems of cities today. The approach, true enough, is esthetic rather than economic or social, but the esthetics of a city are not simple; here too Mr. Stewart is facile rather than profound. What he says is sound enough, and never fury. It merely tickles. The illustrations, while numerous, are (with the exception of those relating to Hereford) rudimentary.

HENRY S. CHURCHILL

*New York City*

*Tomorrow's Chicago.* By Arthur Hillman and Robert J. Casey. Chicago: University of Chicago Press, 1953. pp. 182. $3.50.

Even life-long Chicagoans can learn a thing or two from this book. For the rest of us—fascinated, puzzled, or repulsed by this amazing place—*Tomorrow's Chicago* unlocks many doors and reveals a helpful perspective on the yesterday and today, as well as the tomorrow, of the city. It is likely that the value of this book derives partly from the interest and time devoted to it by the distinguished and experienced persons who served on its advisory and consulting committees. The authors comprise a team which proves the wisdom of combining research and writing talents. Arthur Hillman is Chairman of the Sociology Department at Roosevelt College, and is the author of *Community Organization and Planning.* Robert J. Casey is a writer, whose recent products include *Chicago Medium Rare.* The book is sponsored by the Chicago Metropolitan Housing and Planning Council.

The Hillman and Casey book is divided into three main parts. Part I traces very briefly but adequately for the occasion what it was that contributed to the origin and growth of Chicago. It also records the first and pace-setting attempts at urban planning for the area in the Chicago Plan of 1909, the Chicago Plan Commission organized in 1939, the Chicago Housing Authority, and the Chicago Recreation Commission. Here is presented the transition from the Indian inspiration to name the place "Chickagou" for garlic, to the "City Beautiful" concept of a later area. Part II deals with Chicago at mid-century, a "look at Chicago's problems and the programs now in motion to change the map of the city." Attention is directed to the facts about the city's population, land use, services, facilities, and a needed discussion of the metropolitan area as the proper unit for study. Part III looks at tomorrow via an effort to review "a little of the best thought on what Chicago of the future will be like and consider how this may come about." It covers goals for Chicago, who is responsible for planning, what tools are used in the process, and what the individual citizens can do to help. The whole book reminds the reader that, like time, a city never stands still.

This book was designed for the layman and for use in the schools. It is seldom that urban history has been so painless to read, so its response should make it a kind of modern *Wacker's Manual.* This book is full of facts, but not overburdened with them; it is well illustrated with photographs. The maps are necessary parts of the text, but in the opinion of this reviewer, are too few in number. The same might be said regarding both the section on Questions for Study and Discussion and the Bibliography. If the reason for keeping these aids brief is not to frighten the reader from further thinking and reading, then perhaps there is a need for an additional publication. Most planners know about the *Wacker's Manual* but few have ever heard of the *Teachers' Handbook* (by Walter D. Moody, 1911) that accompanied it and which doubtless greatly increased the use of the manual. The authors could do a second great service to planning education by preparing an improved version of the old teachers' handbook to be used with the volume just published. Such aids may not be required for college teaching, but they are a great boon to already overburdened secondary school teachers.

One would be far from the point if this book were dismissed just as a publication useful in Chicago and environs. Rather, it is likely that urban planning will come into its own in rough proportion to the preparation of similar volumes for specific use in the legion of other places facing equally urgent problems.

GERALD BREESE

*Director, Bureau of Urban Research, Princeton University*

*The Story of Agricultural Economics in the United States, 1840-1932.* By Henry C. and Anne Dewees Taylor. Ames, Iowa: Iowa State College Press, 1952, pp. XXVI, 121. $10.

In the preface the Taylors state that their book is a narrative that "tells of the ideas and acts of men who have tried to solve farmers' economic problems." The emphasis, however, is on "ideas and acts" rather than on "men."

The reader will not be offended by references to Taylor's contributions to the science of agricultural economics. These

references provide but a partial reflection of the prominent role which he has played in the development of research tools and the solution of the farmers' economic problems.

The book is the product of more than twelve years of painstaking research and diligent efforts to classify facts, events and developments in a logical and interest-creating sequence. It is very easy for the reader to find what has been done in individual segments of the province of agricultural economics and the main contributions of authors and agencies.

The first part deals with the economic problem confronting agriculture during the depression of the 1930's and the readiness with which agricultural economists accepted the challenge and voiced their ideas about the situation. Part II is in the nature of a corollary to the first and traces the early development of agricultural economics in colleges of agriculture. According to the authors, agricultural economics was then finding itself, and the pioneers were not specialists but men of broad intellect who had to cover the whole field.

The remaining six parts provide a comprehensive discussion of the work done in five of the main areas of activity. Probably because of Henry C. Taylor's contributions and of the tremendous amount of research work undertaken in farm management, this topic is allotted 480 of the 900 pages devoted to research disciplines. What may be some one else's loss will certainly be the farm management student's gain.

Part III dealing with the "economic analysis of farm management problems," gives attention almost entirely to problems pertaining to the management of the individual farm. These problems are studied under the following headings: "Choice of Farm," "Choice of Farm Enterprises," "Intensity of Culture," "Size of Farms," and "Variations in Production Factors"—topics that recur in almost any farm business study. This important part of the book is concluded by a two-page section on "The National Viewpoint." This section is much too brief and includes only excerpts from "What Should the Nation Produce?", a chapter in H. C. Taylor's course in agricultural economics at the University of Wisconsin.

Part IV provides a comprehensive description of the work done and of the techniques used in collecting crop and livestock estimates and compiling the census of agriculture, and of various methods of studying farm management and agricultural adjustments—historical and geographical approach, agricultural surveys, and the outlook approach in production adjustments. These disciplines are not mutually exclusive and it is regrettable that the authors fail to mention any effort made towards an integration of these disciplines. The sections on "Agricultural Surveys" and the "Outlook Approach in Production Adjustments" are concluded by an appraisal relating only to the value of these methods *per se*. No effort is made to compare these with other methods or to show how they could complement or supplement other methods. It is also difficult to justify the omission of an appraisal of the historical and geographical approach and, in particular, of cost accounting studies—a method of research which has been discarded by many farm management research agencies.

The marketing of farm products is the topic reviewed in Part V. An adequate perspective is achieved by opening the discussion with a brief sketch of the development of the U.S.D.A. price series for farm products, the views expressed by some well-known economists on farm prices problems, and of the share of agriculture in the national income. It may be only a matter of personal preference but to this reviewer, at least, it seems that the other sections of this part of the book could have been arranged in a better sequence. The section on "Government Marketing Activities, 1893-1920" might very well have included the one on "Wallace's Search for Remedies for Low Prices" and been followed by the others in the following order: "Marketing Services of the U. S. Department of Agriculture, 1921-32," "Marketing Work in Agricultural Colleges Prior to 1921," "Miscellaneous Contributions Prior to 1922," "Marketing Research, 1921-32," and "Co-operative Marketing Studies."

In Part VI, land economics is dealt with under the headings of "Farm Ownership and Tenancy," "Irrigation Economics," "New Agencies and New Trends," and "Public Interest in the Land."

Part VII reviews the contributions and studies made in connection with "Farm Labor and Farm Wages." The comparative briefness of that section—22 pages—does not detract from the author's skill in reviewing and stressing the timeliness and importance of the work in this field.

For Part VIII the Taylors had recourse to the competence and experience of Norman J. Wall, Head of the Division of Agricultural Finance of the Bureau of Agricultural Economics. Wall deals with farm finance under the three headings of "Agricultural Credit," "Agricultural Insurance," and "Farm Taxation and Local Government." As acknowledged by the authors in their preface this is a "major contribution." The Taylors, indeed, will not be offended with this reviewer's claim that Part VIII is in no way inferior to any other part of the book.

The Taylors have rendered an inestimable service to all agricultural economists. It may be said with complete assurance that their book will have reached the desks of every American and Canadian agricultural economist within less than a year after its publication and that it will be used by most of them for many years to come.

G. P. Boucher

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*The Harvest Labor Market in California.* By Lloyd H. Fisher. Cambridge, Massachusetts: Harvard University Press, 1953. pp. 148. Supplement, appen. and index. $4.50.

Professor Fisher has made a valuable contribution to better understanding of the inter-relations between land use, methods of cultivation and marketing, on the one hand, and the characteristics of the labor market situation through which the farmers are supplied with labor and wages determined, on the other.

His analysis of the causes and characteristics of the fluctuating demand for harvest labor in California's diversified agriculture, and the market forces, institutional arrangements and procedures which operate in California's rural labor market also contributes to the understanding of labor markets in general.

Basically, his study deals with a market in which there is no structure of job rights and preferences such as exists in most urban industries; practically no labor unions; no continuing relationships between individual employers, or even local groups of employers, and their harvest hands; and no job structure centered about specialized skills. The seasonal laborers used in the harvest are just "labor," in the most elementary sense of that term.

It is not strange, therefore, that a diversity of practices have grown up in a harvest situation extending over hundreds of miles from south to north, handling a wide variety of vegetables and fruits as well as grains,which ripen at various times and in various places over months of time. The fact that the varied local and crop situations are largely free of limitations imposed by law, collective bargaining or even custom, accentuates the tendency to handle the harvest situation differently in different localities and in different years.

The author opens his analysis with a chapter on the theory of the harvest labor market, in which he depicts the characteristics of the economic activity under examination, i.e., the harvesting of a complex crop over a large area and during a long harvest season; then, in subsequent chapters, he describes the types of labor supply, the wages phenomena of the harvest, and the historical development of the labor contractor systems which have been a part of California agriculture since 1868. He compares these with labor contracting as it has obtained in a number of urban industries. Finally, in his chapter on conclusions he recommends changes which could improve the lot of the migratory casual laborers involved without impairing the efficiency of the harvest process.

Don D. Lescohier

*University of Wisconsin*

## Mid-Century Conference on Resources for the Future

Of more than passing interest to the readers of this journal is the announcement of the formation of a non-profit corporation to foster research and education in the field of natural resources, called Resources for the Future, Inc. Horace M. Albright of New York is chairman of its board and R. G. Gustavson, until recently chancellor of the University of Nebraska, is president and executive director. A "Mid-Century Conference" has been called to meet in Washington early in December where subjects of such timeliness as "The Public Lands: Who Should Control Them?" and "How Much Should We Depend on Foreign Resources:" will receive a major share of attention.

* * * * * *

## The Population Council, Inc.

A new organization, The Population Council, Inc., has been established recently as a non-profit corporation. It states as its purpose . . . . "to encourage research and education concerning the relationship of the world's population to its material and cultural resources." It plans to study the problems of the increasing population of the world, to support research, and to make known the results of such research. It is making a number of research grants to universities and other established organizations for the training of students in the field of population. Frederick Osborn is executive director of the Council and trustees include Thomas Parran, John D. Rockefeller, III, Frank W. Notestein and Karl T Compton.

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